

AMERICAN FRUIT GROWER



1937

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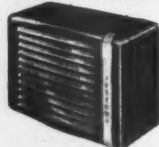
highway use and a tire of first grade quality could only be made to sell at these low prices by building them in tremendous quantities. That's why you **SAVE** in first cost and in cost per mile. You also **SAVE** yourself from accidents because they give greater protection against dangerous skidding and blowouts.

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5.25-17.... 7.70	
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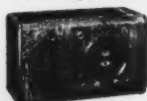


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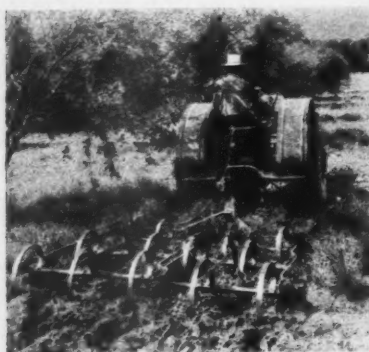
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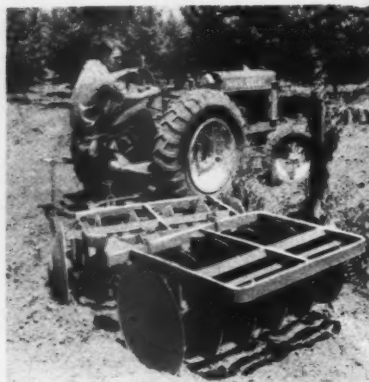
with John Deere Orchard Tractors and Equipment

At right: Model "BO" Tractor pulling a John Deere-Van Brunt "CC" Cultivator. The Model "CC" makes seed beds, destroys weeds, cultivates.



At left: This tractor-drawn John Deere Weed Destroyer rips out weeds and roots. It's a handy tool in almost every orchard or grove.

At right: Get to the bottom of your weed problem and provide a good mulch with the John Deere No. 3 Orchard Cultivator.



Make either right- or left-hand turns without stopping with a John Deere Model "OR" Disk Harrow; a money-saving harrow that does good work.

SAVE MONEY—The simplicity of John Deere Orchard and Grove Tractors, resulting from exclusive two-cylinder engine design, saves money for owners. Parts are fewer, heavier, more rugged. They stand up better under heavy-duty work. You can easily inspect and adjust John Deere Tractors yourself without hiring outside help. John Deere two-cylinder engines burn the low-cost fuels successfully; the fuels that save you money every working day.

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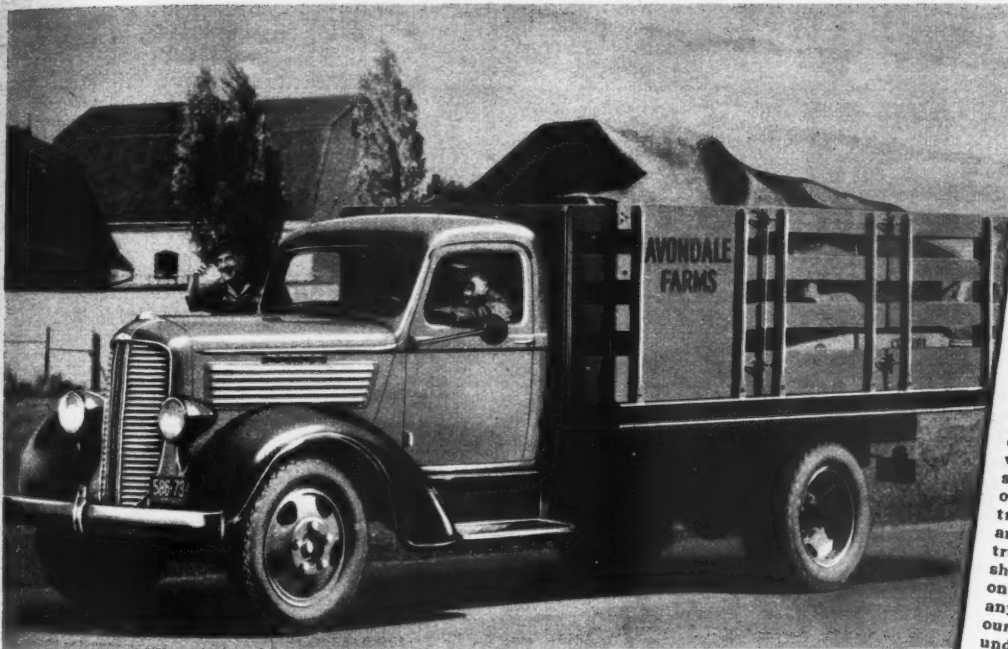
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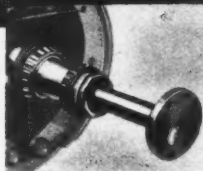
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AMERICAN FRUIT GROWER

The
NATIONAL FRUIT MAGAZINE

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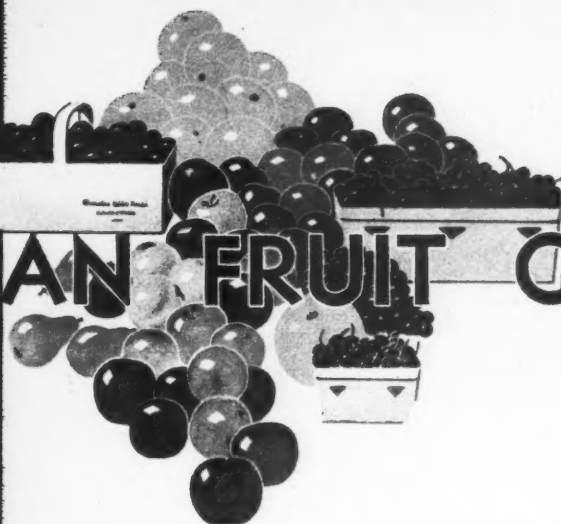
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THE MIRACLE OF MODERN COLD STORAGE

B GROWS good apples. He consults his State Experiment Station frequently. He benefits from hearing the experiences of his fellow members in the State Horticultural Society. He prunes scientifically. He sprays thoroughly. His entire cultural program is sound, modern and carried out with methodical exactness. Because of this he generally has a larger yield of better apples than his neighbors, and, therefore in years of general low production he is usually in a position to make more money than they do. In heavy crop years, however, with markets glutted at harvest time, B's profits are often cut to the bone and sometimes it is all he can do to break even on his year's operations notwithstanding the fine quality and appearance of his fruit.

A also grows good apples. His cultural program is of as high a standard as B's. A's average annual yield, like B's, is generally higher than that of neighboring growers. A's terminal market facilities are also similar to B's, yet, in short crop years or in years of bountiful yields, A gets his price and makes a profit.

The answer is quite simple: A controls his marketing, while B does not.

A controls his market because a few years ago he became tired of seeing his good apples bring cull prices in glutted terminals. He investigated the possibilities of mechanically refrigerated cold storage on his farm and shortly thereafter he built one. Now at harvest time he sells, according to market conditions, enough of his total crop to obtain the ready money he needs. The rest, and the best, of his crop he puts into his farm storage. Here he holds it until price and demand enable him to pack and sell out of his own storage at a profit comparable to the quality of his fruit.

B, who is horticulturally minded only, takes his marketing as it comes and is vaguely glad when the selling season is over. He has had several sad, and rather costly, experiences with commercial cold storage in the terminals of his nearest large city market and now prefers to turn his entire crop over for cash at harvest time. So far, he can't see the possibilities for himself of cold storage on the farm, although he admits, "it may be all right for some growers." Thus B is content to let the market control him.

The result is that, although A and B are on even terms from the standpoint of horticulture, B makes a profit only some years, while A makes money every year.

That is the miracle of modern cold storage, under proper conditions, on the fruit farm.

YEAR AFTER YEAR . . . SEASON AFTER SEASON

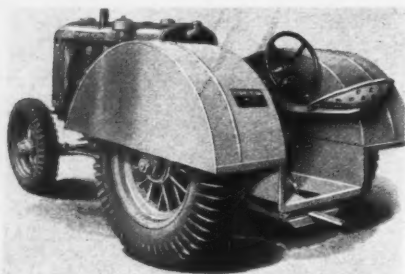


Above: The versatile McCormick-Deering O-12 Tractor pulling a load of apples in a western orchard.

McCORMICK-DEERING TRACTORS POWER YOUR ORCHARD JOBS AT LOW COST

When you buy a McCormick-Deering Tractor for work in your orchard, you are sure of getting the greatest tractor value for your money. What is more, you have the assurance that the tractor will be on the job year after year with a minimum of upkeep and repair costs. Recommended for

work in orchards are four McCormick-Deering Tractors: the Model O-12 grove tractor; the Model 10-20 and Model W-30 with new orchard features; and the Model T-20 TracTracTor, a powerful, accessible crawler tractor. All are easy to maneuver around trees and under low-hanging



Above: McCormick-Deering W-30 Tractor specially equipped with new orchard seat attachment, orchard fenders, and pneumatic tires. Special orchard equipment is also available for the McCormick-Deering 10-20 tractor.

branches. All are compact, economical on fuel, and adapted to work with many different orchard implements. Ask the near-by McCormick-Deering dealer to tell you more about these tractors.

INTERNATIONAL HARVESTER COMPANY
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Chicago, Illinois



Above: Spraying the orchard with a McCormick-Deering T-20 TracTracTor supplying the power. The sprayer is operated direct from the tractor by means of the power take-off.

McCORMICK-DEERING TRACTORS

MODERN COLD STORAGE on the FRUIT FARM

By JONAS HOWARD

"DOES it pay," I asked, "to operate your own mechanical cold storage on the farm?"

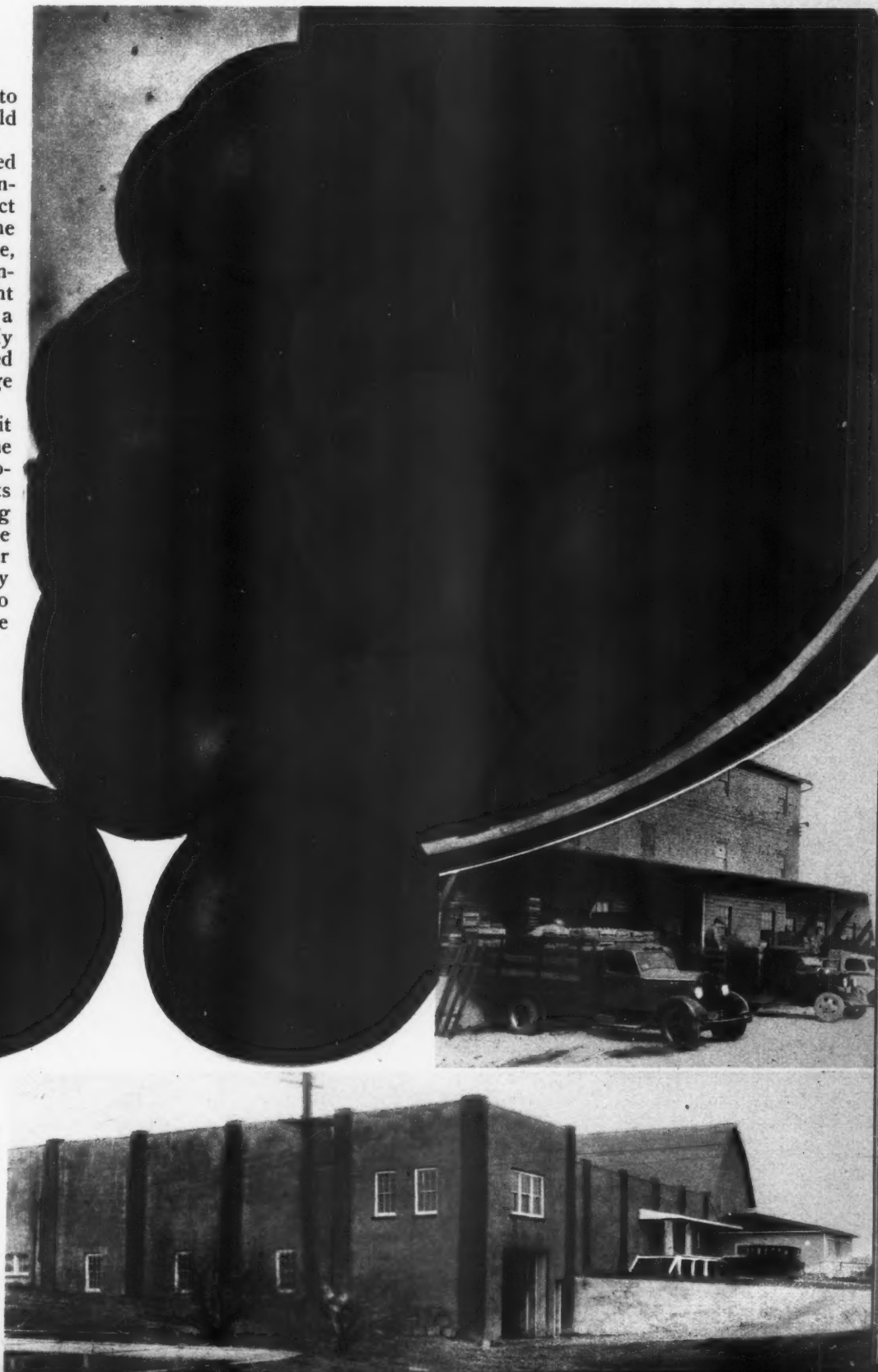
My grower friend's face flushed slowly but that, I realized an instant later, was due to the fact that we had just stepped from the interior of his storage house, where the temperature was constant at 33 degrees, into the bright sunshine of out-of-doors and a temperature of 85 degrees. My own face by now was also flushed and red from the sudden change of temperatures.

"Well," he answered, "figure it out for yourself. It costs me about 15 cents per bushel to provide my own cold storage, 20 cents at the maximum. And by holding for a right market, I get all the way from 25 to 50 cents per bushel as a premium price for my best apples." And then we fell to discussing investment costs, the convenience of holding fruit on the farm at harvest time, the advantage of grading and packing during the winter months to suit the requirements of individual purchasers or the market, and the wider choice of markets available after the "glutted" season is past.

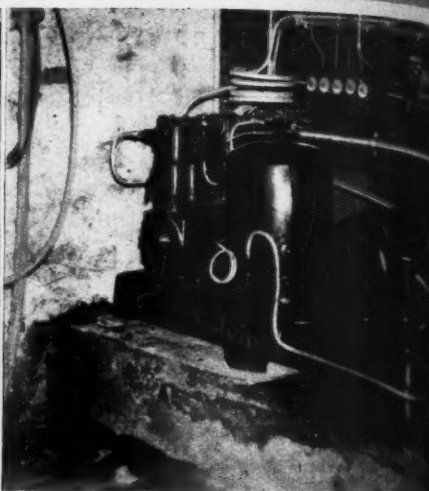
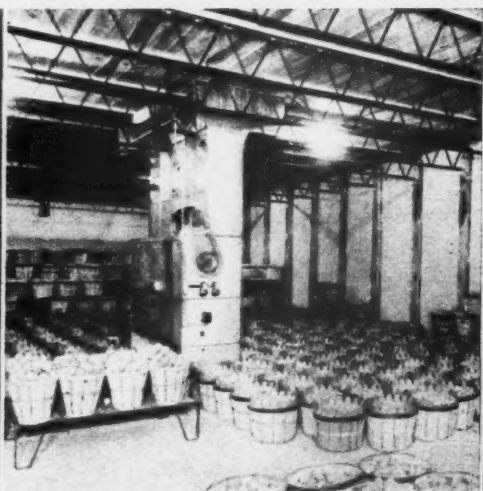
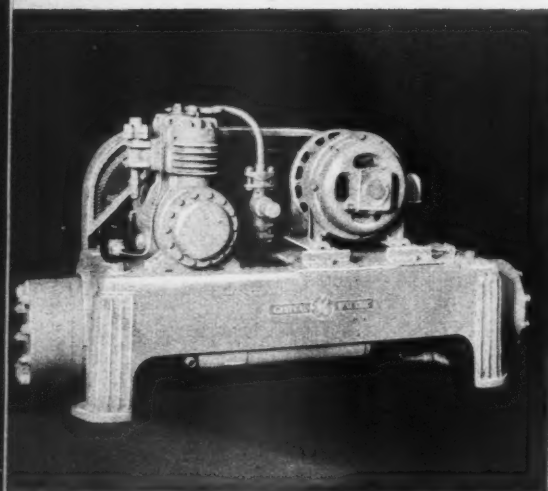
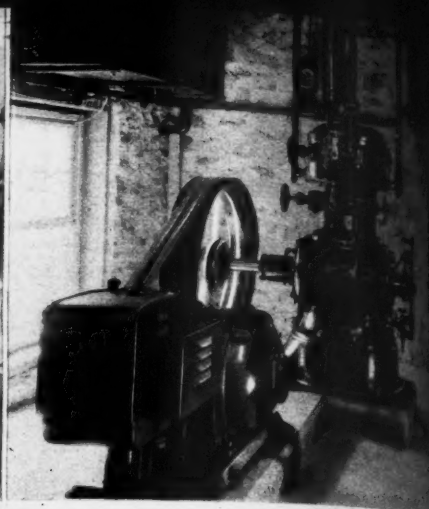
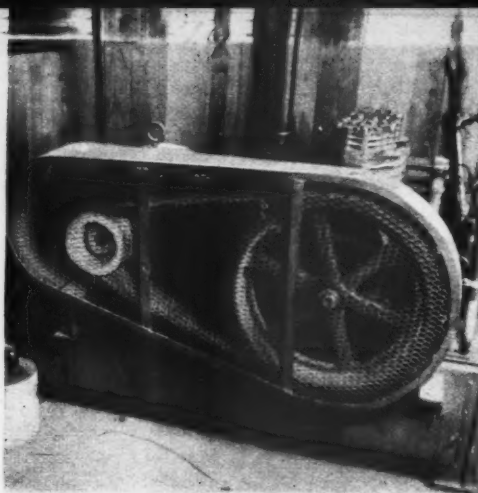
Along with an increasing trend to grower-owned refrigerated storages on the

(Turn to next page)

Top, left to right—The Philip Klenk cold storage in Sparta, Mich. Cold storage and salesroom on the Neal Fruit Farm, West Richfield, Ohio. Below, right—The Musselman Cold Storage in Gardners, Pa. Bottom—Grand River Orchards packing house and cold storage, Geneva, Ohio.



Top row, left to right—Frigidaire refrigeration unit serving Ochs Fruit Farm storage, Ohio. Frick compressor in Hillcrest Orchard cold storage, West Virginia. Center row, left to right—General Electric model "Scotch Giant" condensing unit. Carrier cold diffuser in Shaw Orchard cold storage, Pennsylvania. Kelvinator refrigerating equipment in William Zech storage, Michigan. Right, below—Piling boxed apples in a Vilter refrigerated 75,000-bushel Grand River Orchard cold storage, Ohio.



farm (in some instances group-owned storages) it has also been argued that first costs and operation costs considered, farm storage, used for only a few months each year, would cost more than commercial storage. In practice this has not generally proved to be the case.

C. I. Gunness, head of the Department of Agricultural Engineering, Massachusetts State College, is authority for the statement that, as a rule, farm storages are actually built at lower cost per bushel capacity than equivalent space in larger plants, and overhead for supervision and management is less. Costs will vary in each individual case but, as a rough estimate, a new building can be erected and equipped on the farm at from 60 cents to \$1 per bushel of capacity. Operation costs, not including labor, will run from 10 to 20 cents per bushel.

Let us suppose that you as a grower have decided to build a refrigerated storage. Recent extension of rural electrification in your neighborhood has provided for the first time, perhaps, a reliable source of power for the operation of a cold storage plant. Or it may be you are planning to utilize Diesel power because electricity is still not available in your territory. But you want to know first what kind of a building to erect.

If you are considering converting a common into a mechanically refrigerated storage, your problem calls for advice on remodeling, insulation

and refrigerating machinery. If you are planning a new structure you must consider specific location or relation to other buildings on the farm.

Exterior appearance and good design should not be entirely overlooked in planning a storage. The storage itself will bring customers to the farm. And whether such customers are commercial buyers or individual consumers the likelihood of having them return for more purchases will be enhanced by the attractiveness of the building or buildings.

Every modern design for a cold storage plant includes a packing room. This should be well lighted, preferably by skylights. Depending upon size or the amount of money that can be afforded for the storage building, it should also provide space for a combination office and salesroom. If a salesroom is to be included in the storage building, ample parking space for customers' cars should also be provided off the main road. Landscaping of the approaches to the salesroom and about the storage plant will also pay for itself in added customer appeal.

Fundamental in the construction of a storage is the ability of the structure to permanently resist the passage of air and moisture. It should also be made as fireproof as possible. The storage can be built of concrete, brick, glazed tile, concrete block, or, if economy dictates, of frame construction.

One national authority on refriger-

ation problems, H. G. Brandt, draws attention to the opinion, widely held, that it is extremely desirable to erect the storage building so that much of it is placed against a hill or partly underground. This is on the theory that a smaller refrigerating load will then prevail on this basis. The fact is, as he points out, the ground temperature does not vary widely over the span of the various seasons. Thus, he says, it becomes plain that cold storage walls erected against ground always have a heat leakage whereas walls not so protected will have a higher leakage during the early fall months, but as the fruit picking season progresses and the winter months come, the heat leakage is less and at certain times even negative, so that heat is leaking from

(Continued on page 21)

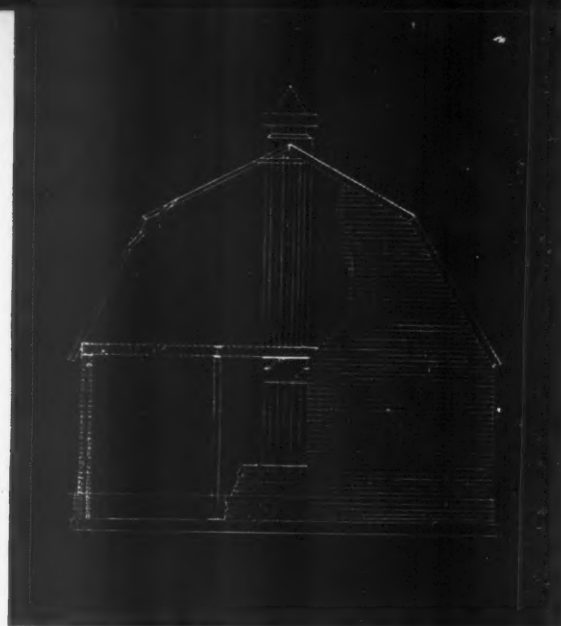
Plans

TO HELP YOU PLAN A COLD STORAGE

Fruit production practices vary from section to section and from State to State throughout the country. The same principle is true when we consider plans for fruit farm storages for different localities. Reproduced on the following pages are plans showing three types of storages from 5,000-10,000 to 25,000-30,000 bushels capacity. These storages range from a low cost, yet efficient unit to the larger and more expensive structures, embracing storage, packing and salesroom facilities.

While the plans as here reproduced may seem to be adequate for actual building, growers contemplating the construction of storages are urged to consult their State Experiment Stations and Extension Services for cold storage plans and construction details best adapted to their situations. Construction, insulation and refrigeration machinery information is available from competent research workers and engineers in the cold storage field.

The plans for the two larger types of storages are published through the courtesy of the Northeast Regional Plan Service of the Vermont Agricultural Extension Service, University of Vermont, in co-operation with the U.S.D.A., while the smaller storage is shown through the courtesy of the Kalamazoo Tank and Silo Company of Kalamazoo, Mich.



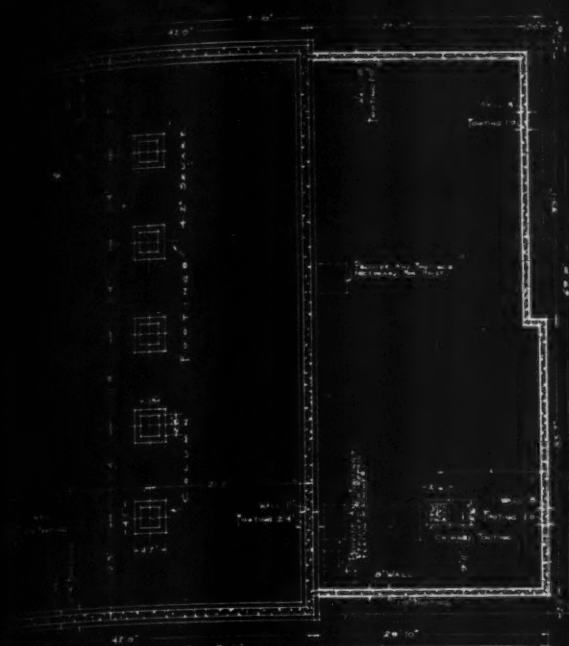
5,000-10,000 BUSHEL CAPACITY



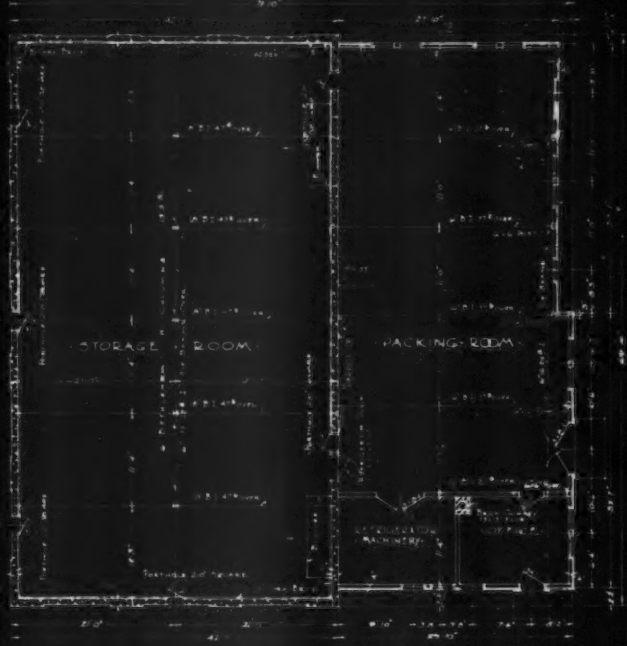
20,000-25,000 BUSHEL STORAGE, PACKING ROOM AND OFFICE



25,000-30,000 BUSHEL STORAGE, PACKING ROOM AND SALES OFFICE



FOUNDATION PLAN



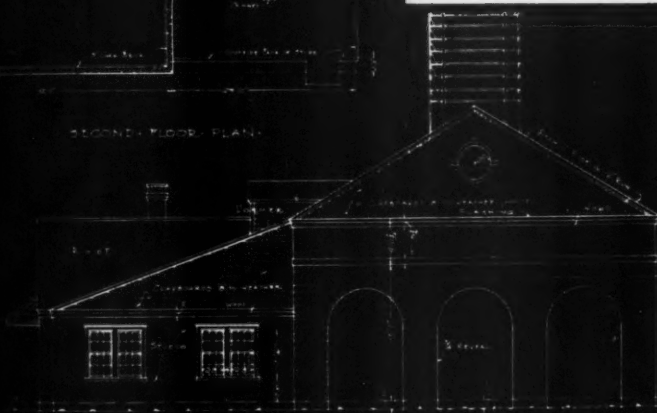
FIRST FLOOR PLAN



SECOND FLOOR PLAN

ATTRACTIVE STORAGE UNIT AND PACKING ROOM

A large packing room adjacent to the cold storage proper features the plans for this 20,000 to 25,000-bushel refrigerated apple storage. Accessibility to the storage from the packing room permits quick disposal of fruit into the storage after packing or vice versa if fruit is packed out during the winter. Blower type refrigeration is provided with capacity to handle warm fruit load and to maintain low temperatures during long storage period. Heavy insulation is specified to prevent loss of low temperatures or entrance of warm outside air. Second floor of packing room provides storage space for fruit packages. Design of the concrete exterior walls and clapboard siding above the walls lends attractiveness to the building. All concrete and stucco surfaces are whitewashed and portholes are painted dark green.



EAST ELEVATION



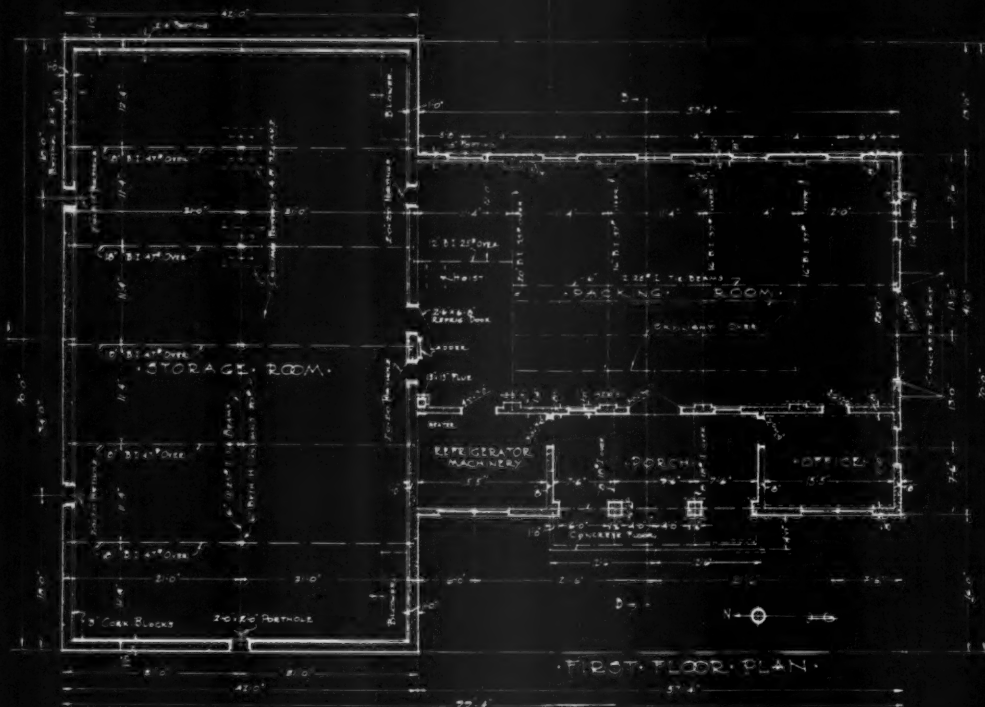
SOUTH ELEVATION



NORTH ELEVATION

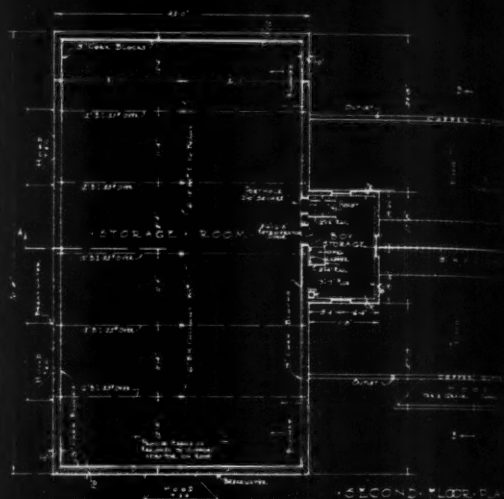


WEST ELEVATION

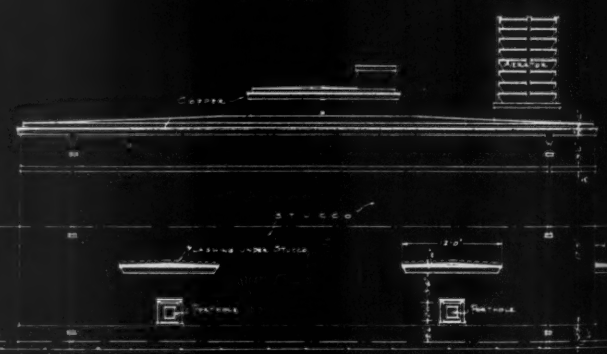


A COMPLETE UNIT, PACKING AND SALES

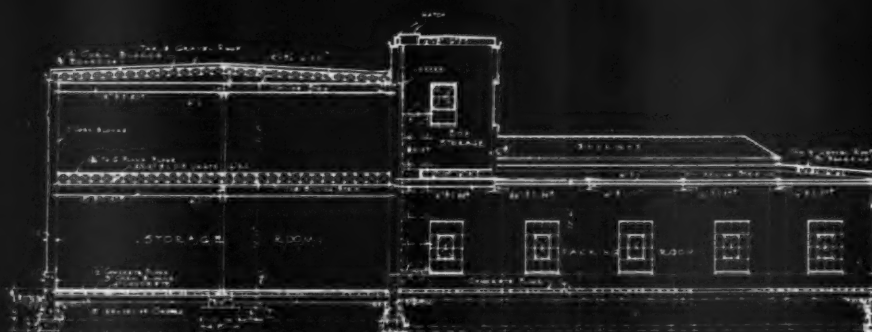
This two-story refrigerated cold storage with packing room attached is an ideal type for 25,000 to 30,000-bushel and larger cold storages utilizing blower type refrigeration. Space is also provided for the fruit farm office, making a complete and efficient unit. A concrete ramp facilitates easy entry to packing room lighted by large skylight. The second-story storage room construction is similar to that of the first floor room. A hoist is provided for efficient conveying of fruit to the second story. Roof is of tar and gravel. Walls are poured concrete faced with stucco. Copper gutters and leaders are recommended. A package storage is provided on the second floor between the second-story storage room and the skylight. This package storage room also houses the hoist equipment.



SOUTH SIDE ELEVATION



NORTH SIDE ELEVATION



LONGITUDINAL SECTION ON LINE A-A



CROSS SECTION ON LINE B-B

Outing a bushel space eight-ceiling center of one ing m and u thick, plicat For a anhyo tion. after there A f struct ing a Fat storag Grow cours turer. appro JUN

"Your Magazine Inspired Me to Do"

Says Edward Wiese

By Edward Wiese

OUR brick storage building is 26 by 46 feet, furnishing approximately 10,000 cubic feet for about 4000 bushels of fruit. Wall is 10 inches wide with an air space of one inch through the middle. Heavy three by eight-foot joists, supported by two beams, carry the ceiling load. Thus we have one large room with no center supports. Walls are plastered with a mixture of one part cement to two parts sand. A waterproofing material has been applied over the plastered base and upon this two layers of corkboard, each two inches thick, have been applied with hot asphalt. Final application on inner surface has been a mastic coating. For a refrigerating unit we decided upon a full-flooded anhydrous ammonia plant with ample amount of radiation. This part of the cold storage work is to begin after July 15 and will be completed within 30 days thereafter.

A frame packing house 24 by 50 feet has been constructed in front of the storage to house the refrigerating and packing machinery and provide storage space.

Father and I did all of the work in constructing the storage and packing house which AMERICAN FRUIT GROWER inspired. The refrigeration machinery is of course being installed by the engineers of the manufacturer. Cost of insulating materials and machinery is approximately \$3500, not counting our own time.

Top, left—Construction work on the Wiese fruit storage in Berrien County, Michigan, was started in August, 1936, and completed in the spring of 1937. The refrigerating machinery is now being installed.

Top, right—The frame packing house built in connection with the Wiese storage faces the highway. A large pool and gardens are planned to beautify the surroundings and act as a magnet in attracting motorists.

Bottom—Front view of the packing house as it appeared in September, 1936. The village in which the 40-acre Wiese orchard and refrigerated storage are located is four miles long and less than 1000 feet wide.

STATE NEWS

A SURVEY OF COLD STORAGE DEVELOPMENT ON THE FRUIT FAR

ALABAMA—While our commercial apple crop is not great, both common and commercial cold storage are used for a small percentage of the later varieties.—L. M. WARE, Auburn.

ARIZONA—Orange and grapefruit grower associations affiliated with the California Fruit Growers Exchange are making plans to install refrigeration equipment for handling a considerable number of carloads of fruit during the next marketing season. One outstanding individual grower-owned cold storage, in operation many years, successfully holds apples for the winter and spring.—A. F. KINNISON, Tucson.

CALIFORNIA—Of the nine cold storage plants in the famous Watsonville district, two are commercial, two co-operatively owned and operated by growers, and five—constructed within the last five years—grower-owned, with another grower-owned under construction. Capacity of grower-owned storages ranges from 50,000 to 250,000 boxes each, with apples being their chief crop.—FRANK I. KELLOGG, Watsonville.

CONNECTICUT—By the end of 1935, number of grower-owned refrigerated storages totaled 22, with capacity of 284,500 bushels. Activity continued through 1936, and a number of storages are projected for 1937. Trend will undoubtedly continue for several years.—L. L. SAMMET, Storrs.

DELAWARE—Successful operation for past five years is promising record of one grower-owned cold storage. Other cold storages have been erected through stock subscriptions taken mostly by fruit growers.—W. T. DERICKSON, Dover.

IDAHO—Modern grower-owned cold storages are unknown to date, although many growers are using common storages which are proving unsatisfactory.—W. T. CALLENDER, Boise.

ILLINOIS—Conversion of many common storages into cold storages is imminent. While supplied with ample commercial cold storage facilities, growers would be at a decided advantage over competitors who ship into their territory were they equipped with their own cold storages.—J. B. HALE, Salem.

INDIANA—Common storage is proving to be the stepping stone to grower-owned refrigerated storage. Capacity of recent grower-owned cold storages ranges from 9,000 to 50,000 bushels. Nobody realizes better than the grower the importance of proper storage facilities in attempting to supply the growing public desire for well-preserved apples the year round.—EVERETT WRIGHT, Lafayette.

IOWA—While individual common storages seem to be the rule, and the trend is still in that direction, interest in converting these storages into refrigerated units is being aroused.—H. H. PLAGGE, Ames.

KANSAS—Both grower-owned common and cold storage facilities may be found in the Arkansas River Valley apple section of Kansas.

Apples from the heavy producing section in northeast Kansas are shipped to cold storages in nearby cities.—G. W. KINKEAD, Topeka.

KENTUCKY—Movement is on foot looking toward building of cold storages by co-operative effort. Changeover of some common into cold storages is contemplated.—BEN E. NILES, Henderson.

MAINE—With more open roads during our long cold winters, better transportation, and more attention to local markets, signs are apparent that more apples will be stored at home.—J. H. WARING, Orono.

MARYLAND—Four of the five grower-owned cold storages have been made over from common storages, being originally built so as to be easily convertible. Capacities 4000 bushels to 50 cars (528 bushels per car). The latter storage is to be enlarged this year by additional 40-car capacity. More growers are looking forward to converting their storages.—A. F. VIERHELLER, College Park.

MASSACHUSETTS—At present we have 37 country point cold storage plants for apples. Of these 37 storages, 28 are farm located and owner operated for their own fruit, with total capacity around 450,000 bushels. The other nine is made up of custom storages, with total capacity about 650,000 bushels. I look to see cold storage capacity at country points expand to 1,500,000 bushels in the next three or four years, particularly since many non-commercial growers have 100 or 500 or even as many as 1000 or 2000 bushels of apples they would like to store if there was a place handy.—W. R. COLE, Amherst.

MICHIGAN—We have probably a couple of hundred common storages and three or four cold storages, with the trend toward cold storage.—H. D. HOOTMAN, East Lansing.

MINNESOTA—First mechanical refrigeration to be installed in a grower-owned storage in the State is on the Andrews Orchards at Faribault the past winter. A carbon dioxide unit rated at 25 tons of ice per day will be operated to hold fruit at proper temperature during winter and nursery stock during spring.—J. D. WINTER, St. Paul.

MISSISSIPPI—Construction work is being completed on 11 cold storage and warehouse units under a co-operative agreement with the State extension department, county and municipal authorities, and WPA. It is expected one unit at least in each plant will be used for storing fruits and vegetables.—W. M. CRUMPTON, State College.

MISSOURI—Construction of two grower-owned cold storages during the present summer in anticipation of the 1937 crop indicates the trend. Use of common storage is limited owing to unfavorable temperatures until late fall.—W. R. MARTIN, Jr., Columbia.

MONTANA—Absence of commercial cold storage plants at concentrated points where volume can be secured has seriously crippled the fruit industry and is limiting the markets

to a very close area. Present trend is toward erection of more plants at concentration points.—GEORGE L. KNIGHT, Missoula.

NEBRASKA—Commercial cold storage companies have ingratiated themselves with their fruit grower customers by not only acting as a collection agency but also finding buyers for the fruit stored in their warehouses. Growers consequently have not to date felt the need for constructing their own storages.—E. H. HOPPERT, Lincoln.

NEW HAMPSHIRE—Total of 24 common apple storages in 1934 has increased to 29, while cold storage units have increased from six to eight during the same period. A co-operative storage at Wilton takes care of about 10,000 bushels while a custom cold storage at Manchester holds several growers' crops.—C. O. RAWLINGS, Durham.

NEW JERSEY—Approximately 25 grower-owned cold storages are very satisfactorily holding the crops of as many growers. There is a possibility of this number increasing this year either through construction of new buildings or conversion of farm buildings. Average capacity of these storages is probably between 10,000 and 15,000 bushels.—ARTHUR J. FARLEY, New Brunswick.

NEW YORK—The small privately owned cold storage plant for fruit has been steadily on the increase in the fruit industry of the East for the last 10 or 15 years. Figures for 1935 from Ulster County in the Lower Hudson River Valley prepared by Prof. G. P. Scoville of Cornell University showed that seven of 60 growers interviewed had their own cold storage plants. The apples raised and stored by these seven growers amounted to nearly one-third of all the apples stored. An additional 15 per cent was placed in these storages by neighboring growers.—H. B. TUKEY, Geneva.

OHIO—Successful operation of a number of grower-owned cold storages is creating interest among other growers, many of whom contemplate converting their common storages. Plans are being completed for a 50,000 bushel co-operative cold storage.—F. H. BEACH, Columbus.

NORTH CAROLINA—Cold storage facilities on the R. W. King Orchards near Raleigh take care of 40,000 bushels of apples and peaches, while the cold storage plant of A. R. Barber at Waynesville serves an apple orchard producing between 50,000 and 100,000 bushels. Fruit from other orchards not moved immediately after harvest is placed in common storage.—H. R. NISWONGER, Raleigh.

OKLAHOMA—For the most part construction within recent years has been of common storages.—FRANK B. CROSS, Stillwater.

OREGON—Trend is towards centralized cold storage by co-operatives, independent processors, and commercial cold storage plants. The Apple Growers Association at Hood River, having about 75 per cent of the total

age in its membership, is increasing its cold storage facilities. The Springbrook Co-operative in Yamhill is rebuilding its plant and putting in cold storage. There is activity in other sections as well.—O. T. McWHORTER, Corvallis.

PENNSYLVANIA—A large number of grower-owned cold storages have been constructed. Capacity of the 12 cold storages being built this year ranges from 4,000 to 35,000 bushels.—J. U. RUEF, State College.

RHODE ISLAND—About 15 per cent of the apple crop is stored at present in grower-owned cold storages. Increased activity is expected. Capacity of storages ranges from 3,000 to 25,000 bushels.—E. P. CHRISTOPHER, Kingston.

SOUTH CAROLINA—The size of our apple industry so far does not justify construction of grower-owned cold storage plants. Our peach industry is of good size and a number of growers pre-cool their fruit. Apples and peaches are stored to some extent in local public storage.—A. E. SCHILLETER, Clemson.

SOUTH DAKOTA—With extensive plantings of the long-keeping Haralson apple, interest in cold storage will undoubtedly be aroused.—W. A. SIMMONS, Sioux Falls.

TENNESSEE—During the past five years construction of refrigerated storages and insulated common storages has shown remarkable growth. One of the largest units is the 50,000 bushel cold storage serving the 300-acre apple orchard of Bonham Brothers at Shady Valley. Common storage serves a number of growers who operate roadside markets, and many small growers have some form of insulated common storage. Because of lack of custom storage facilities in many of the smaller cities, growers serving these markets are hoping the extension of low-cost electricity and improvement in insulated construction and refrigeration machinery will enable them to construct cooperative storages.—A. N. PRATT, Nashville.

TEXAS—Taking electric power to the front door of the farm is responsible for present increase in cold storage facilities.—J. F. ROSEBOROUGH, College Station.

UTAH—While we have very few grower-owned storages, growers are using public cold storage facilities more extensively now than they did several years ago, particularly for fancier grades.—FRANCIS M. COE, Logan.

VERMONT—A limited number of apple growers are converting their common storages into cold storages. There are discussions and plans for cooperative cold storage plants.—M. B. CUMMINGS, Burlington.

VIRGINIA—More than one-fourth of the 6,000,000 bushel apple cold storage capacity available in Virginia and Washington, D. C., is grower-owned and controlled. The Winchester (Va.) Cold Storage, with capacity for more than 1,400,000 bushels, is owned and controlled by growers. The Crozet (Va.) Co-operative Cold Storage Company, capacity 120,000 bushels, is grower owned and controlled. Bonham Cold Storage and Produce Company, owned by Bonham Orchards at Chillhowie, Va., has capacity for 60,000 bushels, in addition to their Tennessee orchards plant. Small individual storages have been constructed by growers within the past three or four years. Because of the tendency of some commercial storages to maintain high rates, increased interest in grower-owned cold storages is expected.—W. S. CAMPFIELD, Staunton.

WEST VIRGINIA—Trend in commercial apple and peach orchards is strongly toward construction of grower-owned cold storages. Several have been built within the past five years, among them the 100,000 bushel storage of Consolidated Orchard Company at Paw Paw. About 10 per cent of the apples are kept in grower-owned cold storage at present.—CARROLL R. MILLER, Martinsburg.

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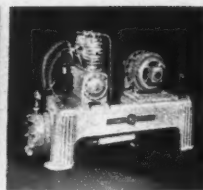
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POMOLOGICAL SOCIETY

Fruit Tour West of Mississippi

LAST month your attention was called to the tour being planned by the A.P.S. to visit the chief fruit growing regions lying west of the Mississippi River.

Interest in the tour is developing very satisfactorily, and it is hoped that 60 or more people will avail themselves of this opportunity to see the great and progressive fruit growing regions of the West. A conducted tour of this kind brings together many leaders in the industry and makes possible many contacts in the regions visited not ordinarily available to the tourist.

Arrangements are being made so that at each stop the party will be extended many courtesies, enabling us to see and meet the fruit industry to the very best advantage. The side trips are planned to include some of the most famous scenic spots in America.

John T. Bregger, 209 West Main Street, Waynesboro, Pa., is chairman of the tour arrangements committee, and those who plan to make the tour should write him their intention at once.

Some Fruit Production Statistics

The U.S. Census of Agriculture for 1935 says that "The outstanding changes in tree and vine fruits on farms in the five-year period from 1930 to 1935 were substantial increases in the number of cherry, grapefruit and orange trees, marked decreases in the number of apple and peach trees, and moderate declines in the number of pear and plum trees and in the number of grape vines. . . . A further change of importance during this period was a decline in new plantings for each of these fruits as evidenced by the number of living non-bearing trees.

"The total number of grapefruit trees January 1, 1935, was 13,161,101, which was 42 per cent greater than on April 1, 1930. About three-fourths of the 1935 number of trees were of bearing age." Florida and Texas are the chief grapefruit producing states. Texas greatly increased its planting of grapefruit trees and has nearly four times as many non-bearing trees as are in Florida.

From 1930 to 1935 orange tree plantings increased 22 per cent. California and Florida together produce more than 95 per cent of the oranges grown in the United States.

Sour cherry plantings are reported as having increased 16 per cent from 1930 to 1935. Michigan leads in production, and New York is second. On the Pacific Coast the sweet cherry is grown extensively in California, Oregon and Washington.

Apples and Peaches

Apples occupy a larger acreage than any other fruit, but a decline in the number of trees is reported to be 14 per cent in the five-year period. About one-sixth of the 100,054,047 apple trees are in the non-bearing class.

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For a number of years Washington has led all other states in apple production and is credited with producing around 25 per cent of the United States crop. The five western states, Colorado, Idaho, Oregon, California, and Washington, produced a total of nearly 30,000,000 bushels of the short total commercial crop of 66,000,000 bushels produced in 1936. In the East, New York, the Virginias, Pennsylvania, and New Jersey are important apple producing regions, while in the Middle West, Michigan, Illinois, and Ohio are the ranking states.

In peaches, the western states are leaders in production and usually produce a third or more of the crop. California far exceeds any other state in production of the peach. The total production varies

from 40,000,000 to 55,000,000 bushels per year.

Pear production is usually somewhere close to an average of 25,000,000 bushels. The three Pacific states, California, Washington, and Oregon, produce 15,000,000 or more bushels each year. Pear trees of producing age totaled 16,694,775 in 1935, and another 2,741,362 trees were non-producing. The three Pacific states were credited with having 8,377,083 bearing trees and 1,338,323 non-bearing trees. In the East, New York and Pennsylvania are the leaders, while in the Middle West, Michigan, Illinois, and Ohio are the ranking states from the standpoint of trees and production.

Plums and prunes are a considerable item in our domestic fruit supply. In 1935 there were 25,296,579 bearing trees reported by the census, and another 3,097,780 non-bearing trees. The crop in 1934 was reported in terms of bushels and totaled 23,296,000 bushels, and the Pacific states were reported as having produced 20,872,373 bushels, or nearly 90 per cent of the total.

Statistics for other fruits are equally as interesting. Fruit growers need statistical census information relative to agricultural production. Such information is of basic importance in intelligently conducting the business of fruit growing. The Census Bureau at Washington has compiled statistics on practically all of the fruit crops grown in America, and makes such information available to all those interested in it.

The above statistical discussion of some of our leading fruit crops indicates the role of the western states in fruit growing, and indicates the desirability of making the A.P.S. tour this summer in order to see and study at first hand the vast fruit industry of the West.

CONTINUE N.A.I. CAMPAIGN

"Everything is in bloom from roots to tops of trees," exclaimed G. Leslie Smith, president of the Illinois State Horticultural Society, in describing fruit prospects in his State before the third annual meeting of the National Apple Institute held in Columbus, Ohio, May 18.

Other reports from prominent fruit producing sections of the nation indicated that special effort will be needed to move what promises to be a "bumper" crop.

Elected as president of the National Apple Institute for the coming year was Dr. J. H. Gourley, chief in horticulture at the Ohio Agricultural Experiment Station and Ohio State University and associate editor of AMERICAN FRUIT GROWER. His aides in the direction of this nation-wide advertising and promotion enterprise will be John H. Lyman, prominent New England fruit grower, as vice-president; Dr. H. E. Barnard, research director of the Farm Chemurgic Council, as secretary; and W. B. Baughman, Ohio grower whose individual advertising enterprises have gained him much attention, as treasurer.

This slate of officers resulted from deliberations of nominating committeemen including G. Leslie Smith, Illinois; George W. Kinkead, Kansas; C. Purcell McCue, Virginia; and Frank H. Beach, Ohio extension pomologist. New directors named at the Columbus meeting include prominent workers in the regional apple institutes throughout the country.

The ever-present question of fund raising

provoked long discussions. H. D. Simpson, last year's treasurer of the institute and well-known Vincennes, Ind., fruit grower, moved that Prof. B. S. Pickett be appointed to solicit funds during a two months' period this summer. The motion was unanimously adopted.

Still to be decided was the method for collection of the funds. Discussion was capped by an accepted motion of Patterson Bain, manager of the Riverview Orchards, McBain, Mo., stating that, "The National Apple Institute adopt the budget of \$7200 to be secured by request of one-tenth cent per bushel from growers contributing to local apple institutes, and one-tenth cent from growers not contributing to apple institutes, by contributions from allied industries and from state horticultural societies, it being understood that sums collected in excess of the budget be allocated to research and that specific sums be accepted if offered for research projects."

Growers are urged to support this vital project through their local institutes, state horticultural societies, or as individual producers. Questions relative to the National Apple Institute and its activities may be addressed to the institute at 224 Wimmer Building, Indianapolis, Ind.

H. L. Lantz
SECRETARY

The American Pomological Society is pleased to announce that its Nomenclature Committee is co-operating with the Standardized Plant Names Committee on the revision of this important plant name guide. The chairman of the committee, Dr. M. J. Dorsey, of Urbana, Ill., will welcome ideas on the most effective ways to present desirable lists of fruits, and on the principles which should prevail in naming new varieties.

CONVERTING COMMON STORAGES

"... Consistently heavier hauls and the need for increased speed resulted in a decision of the Board of Directors of Northeast Fishing Fleet, Inc. to equip 10 of their four-masted schooners with Diesel motors. This new equipment will allow the boats to maintain a steady speed of seven knots per hour with full cargo."—*New York Chronicle-Herald, September, 1934.*

"... Along with the construction of new cold storages is the increasing number of common storages being converted into cold storage units by the installation of mechanical refrigerating units and better types of insulation. In many instances remodeling and installation of some of the latest types of cooling equipment have given the grower a modernized cold storage plant of his own for a comparatively small investment."—*American Fruit Grower, July, 1936.*

JUST as ships of New England fishing fleets were converted to power boats when needed, hundreds of fruit growers, finding that common storages, dependent upon outside temperatures for cooling, will not maintain stored fruit satisfactorily under many harvest-time conditions, are rapidly converting their common storages into cold storage facilities.

Contrary to popular belief, the trend toward conversion of common storages to the cold storage types is not centered in the southern states. It is interesting to note that four of the five cold storages now in operation in Maryland were formerly common storages. Four out of 28 grower-owned cold storages in Massachusetts were converted from the common types. W. R. Martin, Jr., secretary of the Missouri State Horticultural Society, reports that many Missouri growers have found common storages impractical for fall varieties. Another report, from Vermont, carries news that a number of growers in that section are planning to convert their storages. Many Illinois growers who built common storage plants some years ago are now contemplating the conversion of these units. There

(Continued on page 20)

Conveyors aid orderly stacking of boxed fruit in Musselman Cold Storage at Gardners, Pa.

GROWTH OF CO-OPERATIVE STORAGES

FROM California's Monterey Bay to the Rocky Coast of New England, co-operative fruit cold storages are serving growers whose combined efforts have made them possible.

Largest of the co-operative ventures is the grower-owned and controlled Winchester, Va., cold storage, with a capacity of 1,400,000 bushels. Watsonville, Calif., near Monterey Bay, boasts two co-operative cold storages. In the same community are five individual grower-owned units and two commercial plants.

Out of every fruit-producing section come rumors of more construction, planning and embryo discussions of co-operative fruit storages. Vermont growers are making plans. There is a movement in Kentucky to build a large co-operative storage. The trend in Oregon is toward centrally located cold storages operated by co-operatives. Location of a northeastern Ohio co-operative cold storage has been selected. Thus are reported activities of growers whose fruit farm locations permit them to join their neighbors in the storage of their fruit.

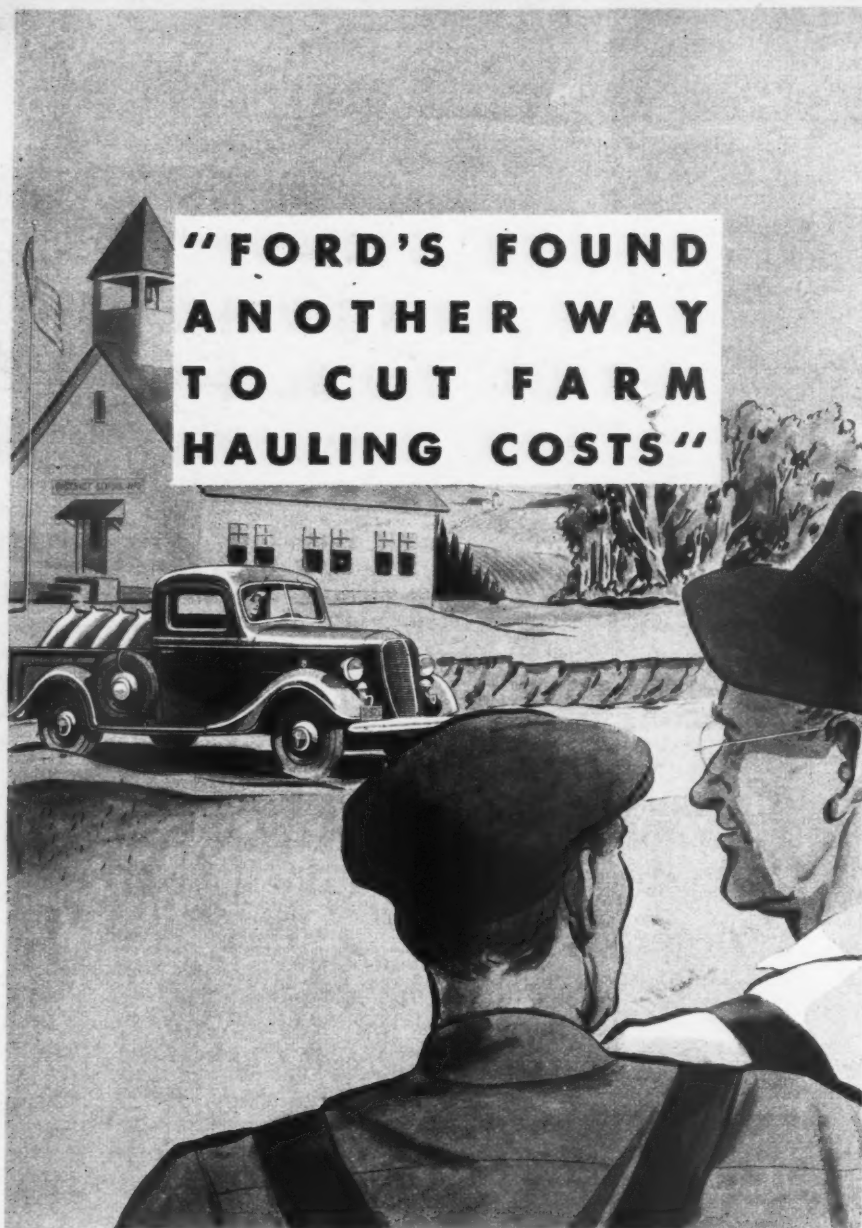
Most striking example of co-operative cold storage activity is that of the northeastern Ohio group. Joining forces in a concentrated effort during the past winter, growers in Columbiana and Mahoning counties held several meetings to discuss plans.

Before definite plans could be presented to potential members considerable pioneer work had to be done. For more than a year leading fruit growers of the section visited cold storages throughout the State. From their observations were formed specific plans for the proposed cold stor-

(Continued on page 20)

Shown below is recently converted cold storage at Ohio Orchards Co., Milford Center.





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PAGE 20

AMERICAN FRUIT GROWER

COMMON STORAGES

(Continued from page 19)

are a few common storages being built throughout the country, most of which, however, will some day be converted into cold storages.

Back of this decided trend is the fact that efficient refrigeration machinery has been brought within the reach of growers with smaller acreages by engineers who have designed equipment that is easily installed and operated.

Associated with the improvements in refrigeration machinery are the advancements made in insulation material. In converting the common into a cold storage a change in insulation may be necessary before the storage can be operated successfully. Water-proofed insulation of sufficient minimum conduction value is now generally available.

Growers who plan to convert their common storages are urged to consult competent refrigeration engineers who will gladly offer advice as to the proper insulation and machinery to be used.

From the experiences of several growers who have changed their common storage plants into modern refrigerated buildings comes assurance that this practice is well worth the expense involved. Fruit grower William Zech of Baroda, Mich., says that he was able to pay for his refrigeration equipment in one year by obtaining an added revenue from his fruit over what he would have received had the fruit been kept in common storage.

CO-OPERATIVE STORAGES

(Continued from page 19)

age plant and packing shed. These were then presented at the meetings. So, from the ideas of a few fruit growers, there will soon be constructed a cold storage plant of approximately 50,000-bushel capacity.

The site for this co-operative storage has now been selected and contracts for the building and refrigeration equipment will soon be let. Organization of the group has been along the lines of co-operative law with each member having one vote in the negotiations of the co-operative.

Similar to the co-operative storage is the "custom" unit, enjoying its greatest popularity in the New England region. Massachusetts, alone, has nine of these storages. Such a plant is operated by a commercial concern, stock of which is often owned by growers who use the storage facilities. These plants are located at country points, near orchards, so that transportation costs are cut to the minimum.

Also available for grower use are the terminal cold storages. Such plants are located in large markets.

JUNE, 1937

FARM COLD STORAGE

(Continued from page 10)

the inside to the outside. Less daily average operation of the refrigerating equipment may therefore be expected from a building completely exposed. Since no gain can be shown for underground or against-ground construction, there is, as Mr. Brandt points out, no object in adding to the cost of the installation by excavation work and the consequent need for waterproofing of those walls which are erected against the earth.

No matter what type of building is used, it must be well insulated to make a satisfactory storage. Specifications of a good insulation are a high thermal resistance; water, vapor, vermin and rodent-proof; odorless; and ease of application. There is a variety of insulating materials which meet the foregoing requirements when used in a properly constructed building. The right type for a given structure should be specified by an insulation expert and a grower can avoid making a costly mistake by seeking competent advice.

In approaching the matter of a cooling system for a mechanically refrigerated storage, the grower will find there is a choice of two types, coil or blower. The coil type depends upon natural air circulation to cool the fruit. The systems using blowers or diffusers create their own air circulation for cooling purposes. Here again the grower will do well to consult a refrigeration engineer who can make recommendations after considering the storage problems involved and the type or arrangement of the building.

Gunness in discussing the management of a cold storage plant states that it is first necessary to decide on the temperature at which apples are to be stored. Most commercial cold storage plants, he points out, consider 32 degrees as the standard storage temperature. Many commercial varieties, he believes, can be stored successfully at the low temperature, although certain varieties are subject to internal breakdown when kept at low temperatures. In general, he finds, low temperatures retard the ripening process and are considered desirable if apples are to be held long. He further suggests that if apples are to be held for the latest possible market, it is advisable to design the plant for 32-degree operation, as obviously the owner can operate at a higher temperature if he finds this advisable. He points out that equipment which will cool the fruit to 45 degrees during loading will normally reduce the temperature to 32 degrees in a week after the loading has been completed.

(To be continued in July)

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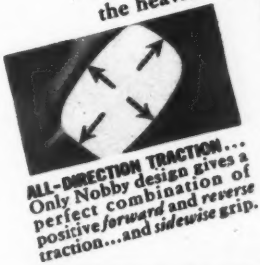
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The size of apples is proportional to the number of leaves that support them as shown at left. Courtesy, Dr. A. E. Murneek, Mo. Agr. Exp. Sta.



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BUYER'S GUIDE *for the* FRUIT FARM

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INSECT AND DISEASE CONTROL

DUSTING EQUIPMENT Dusters

HAND

John Bean Mfg. Co., Lansing, Mich.
Binks Mfg. Co., Chicago, Ill.
E. C. Brown Co., Rochester, N.Y.
A. B. Farquhar Co., Ltd., York, Pa.
Feeny Mfg. Co., Muncie, Ind.
H. D. Hudson Mfg. Co., Chicago, Ill.
Messinger Mfg. Co., Tatamy, Pa.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Nico-Dust Mfg. Co., Los Angeles, Calif.
Oakes Mfg. Co., Tipton, Ind.
Peerless Dust Gun Co., Cleveland, Ohio
Root Mfg. Co., Cleveland, Ohio
D. B. Smith & Co., Utica, N.Y.

POWER

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John Bacon, Inc., Gasport, N. Y.
John Bean Mfg. Co., Lansing, Mich.
A. B. Farquhar Co., Ltd., York, Pa.
Friend Mfg. Co., Gasport, N.Y.
Messinger Mfg. Co., Tatamy, Pa.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Root Mfg. Co., Cleveland, Ohio
Shunk Mfg. Co., Bucyrus, Ohio
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Chipman Chemical Co., Bound Brook, N.J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
John Lucas Co., Philadelphia, Pa.
McCormick & Co., Inc., Baltimore, Md.
Mechling Bros. Chemical Co., Camden, N.J.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Nichols Copper Co., New York, N.Y.
Sherwin-Williams Co., Cleveland, Ohio

Nicotine Dusts

Ansbacher-Siegle Corp., Brooklyn, N.Y.
Bowker Chemical Co., New York, N.Y.
California Spray-Chemical Corp., Berkeley, Calif.
Central Chemical Co., Inc., Baltimore, Md.
Chipman Chemical Co., Bound Brook, N.J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
Interstate Chem. Mfg. Co., Jersey City, N.J.
John Lucas Co., Philadelphia, Pa.
McCormick & Co., Inc., Baltimore, Md.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
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Tri-Tox Chemical Co., Washington, Ind.

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General Chemical Co., New York, N.Y.
Kalo Co., Quincy, Ill.
Kay-Fries Chemicals, Inc., New York, N.Y.
McCormick & Co., Inc., Baltimore, Md.
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B. G. Pratt Co., New York, N.Y.
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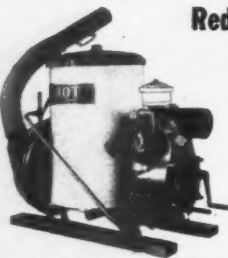
Rotenone Dusts

Ansbacher-Siegle Corp., Brooklyn, N.Y.
Bowker Chemical Co., New York, N.Y.
Central Chemical Co., Inc., Baltimore, Md.
Chipman Chemical Co., Inc., Bound Brook, N.J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
John Lucas Co., Philadelphia, Pa.
McCormick & Co., Inc., Baltimore, Md.
Mechling Bros. Chemical Co., Camden, N.J.
National Sulphur Co., Inc., New York, N.Y.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Rotenone Products Co., East Orange, N.J.
Sherwin-Williams Co., Cleveland, Ohio
Stauffer Chemical Co., New York, N.Y.

Sulphur Dusts

Ansbacher-Siegle Corp., Brooklyn, N.Y.
Battelle & Renwick, New York, N.Y.
Bowker Chemical Co., New York, N.Y.
Central Chemical Co., Inc., Baltimore, Md.
Chipman Chemical Co., Inc., Bound Brook, N.J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
John Lucas Co., Philadelphia, Pa.
McCormick & Co., Inc., Baltimore, Md.
Mechling Bros. Chemical Co., Camden, N.J.
Merrimac Chemical Co., Everett, Mass.
Micronizer Processing Co., Inc., Moorestown, N.J.
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Glutrin

Robeson Process Co., New York, N.Y.

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Continental Rubber Works, Erie, Pa.
Deming Co., Salem, Ohio
Electric Hose & Rubber Co., Wilmington, Del.
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Field Force Pump Co., Elmira, N.Y.
Friend Mfg. Co., Gasport, N.Y.
Goodall Rubber Co., Philadelphia, Pa.
B. F. Goodrich Co., Akron, Ohio
Goodyear Tire & Rubber Co., Akron, Ohio
Hardie Mfg. Co., Hudson, Mich.
Manhattan Rubber Mfg. Co., Passaic, N.J.
Mercer Rubber Co., Hamilton Square, N.J.
Minor Rubber Co., Inc., Newark, N.J.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Republic Rubber Co., Youngstown, Ohio
B. C. Tillinghast Rubber Co., Philadelphia, Pa.
Edwin C. Tyson, Flora Dale, Pa.
U. S. Rubber Products, Inc., New York, N.Y.

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Deming Co., Salem, Ohio
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Field Force Pump Co., Elmira, N.Y.
Friend Mfg. Co., Gasport, N.Y.
W. L. Hamilton & Co., Bangor, Mich.
Hardie Mfg. Co., Hudson, Mich.
H. D. Hudson Mfg. Co., Chicago, Ill.
F. E. Myers & Bro. Co., Ashland, Ohio
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Oakes Mfg. Co., Inc., Tipton, Ind.
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A. B. Farquhar Co., Ltd., York, Pa.
Field Force Pump Co., Elmira, N.Y.
Friend Mfg. Co., Gasport, N.Y.
W. L. Hamilton & Co., Bangor, Mich.
Hardie Mfg. Co., Hudson, Mich.
F. E. Myers & Bro. Co., Ashland, Ohio
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.

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Deming Co., Salem, Ohio
Eureka Mower Co., Utica, N.Y.
A. B. Farquhar Co., Ltd., York, Pa.
Field Force Pump Co., Elmira, N.Y.
Friend Mfg. Co., Gasport, N.Y.
W. L. Hamilton & Co., Bangor, Mich.
Hardie Mfg. Co., Hudson, Mich.
Messmer Brass Co., St. Louis, Mo.
F. E. Myers & Bro. Co., Ashland, Ohio
D. B. Smith & Co., Utica, N.Y.
William Stahl Sprayer Co., Quincy, Ill.
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Field Force Pump Co., Elmira, N.Y.
Friend Mfg. Co., Gasport, N.Y.
Hardie Mfg. Co., Hudson, Mich.
Kalamazoo Tank & Silo Co., Kalamazoo, Mich.
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Peru Wheel Co., Peru, Ill.

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Field Force Pump Co., Elmira, N.Y.
Friend Mfg. Co., Gasport, N.Y.
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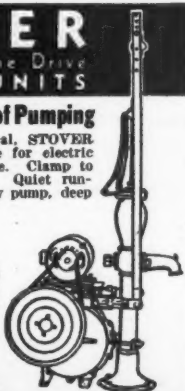
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EXTRA

Orchard Brand News

EXTRA

VOL. 1, NO. 4

JUNE

1937

EASTERN EDITION

ZINTOX*... A BASIC ZINC ARSENATE SIMPLIFIES RESIDUE PROBLEM!

Statement By The Crop Protection Institute Regarding General Chemical Company's Basic Zinc Arsenate

During 1934, 1935 and 1936 The Crop Protection Institute, in cooperation with eight state experiment stations, conducted a series of field tests concerning the use of General Chemical Company's Basic Zinc Arsenate in the control of the Codling Moth. Comparative tests were made with Basic Zinc Arsenate, Lead Arsenate and Calcium Arsenate. The experiments were run with and without stickers. The results of these tests may be summarized as follows:

Basic Zinc Arsenate was as safe to use on apple fruit and foliage as Lead Arsenate.

Basic Zinc Arsenate was definitely more efficient than Calcium Arsenate when used comparatively throughout the season, or in late season sprays.

Basic Zinc Arsenate was slightly less efficient than Lead Arsenate when used comparatively in all Codling Moth sprays.

Where Basic Zinc Arsenate plus an efficient sticker was used, the Basic Zinc Arsenate accomplished control that was equally as effective as the control obtained through the use of Lead Arsenate without a sticker.

Where Basic Zinc Arsenate was substituted for Lead Arsenate in the last two or three sprays of the season, there was little or no reduction in control.

*Reg. U. S. Pat. Off.

But there was, however, a marked decrease in lead residue.

A typical result of substitution in a schedule of seven Codling Moth sprays was as follows: Where Basic Zinc Arsenate was substituted in the last two cover sprays, the lead residue at harvest amounted to 59.8% of that left by the comparative Lead Arsenate schedule. Where substitution was made in the last three cover sprays the lead residue at harvest amounted to 33.5% of that left by seven Lead Arsenate sprays. In either of the two previously mentioned cases there was no sacrifice of control.

It is apparent that Basic Zinc Arsenate can be used to definite advantage in the last two or three cover applications of any apple spray schedule. Basic Zinc Arsenate so used will not only maintain good control attained with earlier Lead Arsenate sprays but will greatly simplify the removal of lead residues to meet Federal tolerance.

The Crop Protection Institute



Apple Bill says: "Zintox sure saves a lot of headaches at packing time."

FOR LATE SEASON SPRAYS—ZINTOX, A BASIC ZINC ARSENATE

Zintox is not a complete substitute for, but is rather a companion to, "Astringent" Arsenate of Lead in the apple spray program. Definitely superior to the available Calcium Arsenates and Fluorine compounds, and slightly less efficient than "Astringent" Arsenate of Lead, it finds its place in the late cover sprays. There it maintains the control gained by "Astringent" Arsenate of Lead in the more crucial early sprays and it halts the accumulation of lead residues.

GENERAL CHEMICAL COMPANY • 40 Rector Street, New York

Please send me information on Zintox, A Basic Zinc Arsenate, and other Orchard Brand products.

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MOSCOW IDAHO
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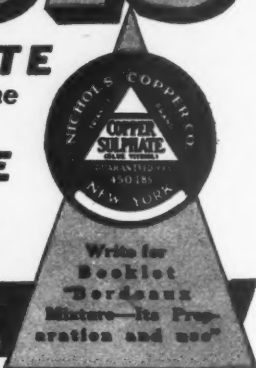
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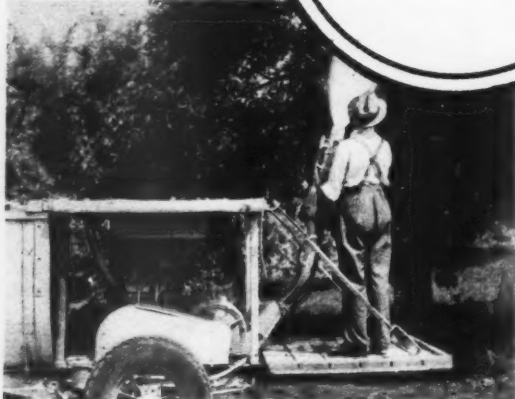
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KOLOFOG PROTECTION is PROFIT PROTECTION

Orchardists who have used Kolofog are reluctant to experiment further. Easy to mix, completely colloidal, Kolofog greatly simplifies the actual work of spraying.

Kolofog (Fused-Bentonite Sulphur) is a sulphur fungicide in its finest form. Because Kolofog (Fused-Bentonite Sulphur) contains a colloid of the irreversible type, once dried on a leaf, it can never be wet again. Unlike the so-called "wettable" sulphurs which after spraying are washed off the leaf with the first rain, Kolofog sticks and protects. This "sticking" quality in Kolofog makes it a most efficient carrier for arsenical poisons or their non-poisonous substitutes, Rotenone and Nicotine Sulphate.

Niagara distributors and dealers will gladly advise you how best to save your crop and increase your profits with Kolofog.



NIAGARA SPRAYER & CHEMICAL CO., INC.

MIDDLEPORT, NEW YORK

SAN FRANCISCO, CALIFORNIA

JACKSONVILLE, FLORIDA

CANADIAN ASSOCIATE

NIAGARA BRAND SPRAY CO. LTD. BURLINGTON, ONTARIO

AMERICAN FRUIT GROWER

INSECT AND DISEASE CONTROL

Nicotine Sulphate

Ansbacher-Hagerstown Chemical Corp., Hagerstown, Md.
Chipman Chemical Co., Inc., Bound Brook, N.J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
Kay-Fries Chemicals, Inc., New York, N.Y.
Nicotine Production Corp., Clarksville, Tenn.
Tobacco By-Products & Chemical Corp., Louisville, Ky.
Tri-Tox Chemical Co., Washington, Ind.



CITRUS SPRA-CREAM

A citrus spray which apple growers have found to be a safe, effective summer oil emulsion at less cost. Dept. 11, B. G. Pratt Co., 50 Church St., New York.

Oils

EMULSIONS AND MISCIBLE OILS— Summer Oils, Dormant Oils, and Tar Emulsions

Ansbacher-Hagerstown Chemical Corp., Hagerstown, Md.
Ansbacher-Siegle Corp., Brooklyn, N.Y.
California Spray-Chemical Corp., Berkeley, Calif.
Central Chemical Co., Inc., Baltimore, Md.
Wm. H. Cooper & Nephews, Chicago, Ill.
Dow Chemical Co., Midland, Mich.
H. A. DuBois & Sons, Inc., Cobden, Ill.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
Gulf Refining Co., Pittsburgh, Pa.
Mechling Bros. Chemical Co., Camden, N.J.
National Oil Products Co., Harrison, N.J.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
B. G. Pratt Co., New York, N.Y.
W. T. Rawleigh Co., Freeport, Ill.
Schaeffer Bros. & Powell Mfg. Co., St. Louis, Mo.
Sherwin-Williams Co., Cleveland, Ohio
Silmo Chemical Co., Inc., Vineland, N.J.
Socony-Vacuum Oil Co., Inc., New York, N.Y.
Standard Oil Co. of Indiana, Chicago, Ill.
Standard Oil Co. of New Jersey, New York, N.Y.
Standard Oil Co. of Ohio, Cleveland, Ohio
Sun Oil Co., Philadelphia, Pa.
Texas Co., New York, N.Y.
J. W. Woolfolk Co., Fort Valley, Ga.



SCALECIDE

The oldest and best known dormant oil spray for scale, aphids, red mite, etc. Solves your toughest spray problems. Does a complete job. Dept. 11, B. G. Pratt Co., 50 Church St., New York.

SUNOCO SELF EMULSIFYING SPRAY

The best of its type for control of SCALE and EUROPEAN RED MITE. Thirteen years of successful use in orchards.

Special low price on carload.

Sun Oil Company, Philadelphia

Makers of BLUE SUNOCO Motor Fuel

CODLING MOTHS

Menace 1937 Apple Crop

LET STANDARD'S SPRAY OILS HELP WIN THE FIGHT AGAINST THIS DESTROYER OF YOUR PROFITS

Reliable authorities warn that the carryover of codling moth worms is the heaviest in years! Unless the *first brood* is checked, severe losses are inevitable.

Specifically developed for Codling Moth control, *Superla Summer Spray Oil* has proved its superior effectiveness wherever used. It is our preferred recommendation for combating the attack of this pest because of its high and lasting killing power, improved spray deposit qualities, better spreading properties and its ability to resist absorption by plant tissues. Used with arsenate of lead it has proved more effective than any other material available, delivering a high percentage of clean, finely finished fruit. Combined with nicotine sulphate it has provided good moth control, particularly in the

later brood sprays, and has been highly effective in controlling leafhoppers, which have become increasingly troublesome in many sections.

Being perfectly compatible with the new "fixed nicotines," both proprietary and home-mixed, *Superla*, in this combination, will give practically as good moth control as oil-lead and lime. Used in all but one cover spray, this will eliminate the need for washing. Fixed nicotine is a most promising development, about which growers should inform themselves.

Growers who prefer a paste type emulsion will find *Verdol Summer Spray Oil* an effective, reliable material. It may be used in all the combinations recommended for *Superla*.

DORMANT OILS

DENDROL DORMANT SPRAY OIL

A tried, proved control for San Jose scale, red mites, and leaf rollers. The most dependable of the dormant spray oils.

STANDARD DORMANT EMULSION

Compatible with lime-sulphur.

STANDARD APHID SPRAY OIL

A powerful agent for control of aphids, scale, and other insects subject to dormant treatment.

STANOLIND DORMANT SPRAY OIL

A new inexpensive dormant oil.

If you have any insect control problems that are troublesome, consult our tree spray representatives. They will be glad to do what they can to help find a solution.

Have you received your copy of "OIL SPRAYS—A FRUIT GROWER'S HANDBOOK AND RECORD"? If not, send for it today. It's free.

STANDARD OIL COMPANY

910 SOUTH MICHIGAN AVENUE

CHICAGO, ILLINOIS

INSECT AND DISEASE CONTROL

Pyrethrum and Derivatives

Ansbacher-Hagerstown Chemical Corp., Hagerstown, Md.
Ansbacher-Siegle Corp., Brooklyn, N.Y.
Chipman Chemical Co., Bound Brook, N.J.
General Chemical Co., New York, N.Y.
Kalo Co., Quincy, Ill.
Kay-Fries Chemicals, Inc., New York, N.Y.
McCormick & Co., Inc., Baltimore, Md.
McLaughlin Gormley King Co., Minneapolis, Minn.
Mechling Bros. Chemical Co., Camden, N.J.
B. G. Pratt Co., New York, N.Y.

RED ARROW GARDEN SPRAY KILLS BOTH SUCKING and CHEWING INSECTS

Your jobber can supply you
Most highly concentrated pyrethrum-soap spray
on the market

WRITE FOR FREE SPRAY CHART
THE MCCORMICK SALES CO.
BALTIMORE, MD.



D-X A remarkable new penetrating pyrethrum spray which saves 1/2 the cost of nicotine. Controls aphids, leaf hoppers and other insects. Write today to Dept. 11, B. G. Pratt Co., 50 Church St., New York.

Rotenone Products

American Gypsum Co., Port Clinton, Ohio
Ansbacher-Hagerstown Chemical Corp., Hagerstown, Md.
Ansbacher-Siegle Corp., Brooklyn, N.Y.
Central Chemical Co., Inc., Baltimore, Md.
Chipman Chemical Co., Bound Brook, N.J.
General Chemical Co., New York, N.Y.
Kalo Co., Quincy, Ill.
McCormick & Co., Inc., Baltimore, Md.
McLaughlin Gormley King Co., Minneapolis, Minn.
Mechling Bros. Chemical Co., Camden, N.J.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Rotenone Products Co., East Orange, N.J.
Stauffer Chemical Co., New York, N.Y.

Silicate of Soda

E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
Philadelphia Quartz Co., Philadelphia, Pa.

Spreaders, Soaps and Stickers

American Colloid Co., Chicago, Ill.
American Cyanamid & Chemical Corp., Insecticide Dept., New York, N.Y.
American Gum Products Co., New York, N.Y.
Ansbacher-Hagerstown Chemical Corp., Hagerstown, Md.
Ansbacher-Siegle Corp., Brooklyn, N.Y.
California Spray-Chemical Corp., Berkeley, Calif.
Colloidal Products Corp., San Francisco, Calif.
Crystal Soap & Chemical Co., Inc., Philadelphia, Pa.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
Golden State Co., Ltd., San Francisco, Calif.
Golden State Sales Corp., New York, N.Y.
Kay-Fries Chemicals, Inc., New York, N.Y.
Mechling Bros. Chemical Co., Camden, N.J.
Monsanto Chemical Co., Rubber Service Laboratories Div., Akron, Ohio
National Casein Co., Chicago, Ill.
National Oil Products Co., Harrison, N. J.
B. G. Pratt Co., New York, N.Y.
Rohm & Haas Co., Philadelphia, Pa.
Sherwin-Williams Co., Cleveland, Ohio
Silmo Chemical Co., Vineland, N. J.

SPRAY CATALIZER

A sensational new sulfur spreader which makes lime sulfur safer and more effective. Prevents black sludge. Increases build-up. Write today to Dept. 11, B. G. Pratt Co., 50 Church St., New York.

Sulphur

DRY LIME SULPHUR

Ansbacher-Hagerstown Chemical Corp., Hagerstown, Md.
Ansbacher-Siegle Corp., Brooklyn, N.Y.
Bowker Chemical Co., New York, N.Y.
Central Chemical Co., Inc., Baltimore, Md.
Chipman Chemical Co., Bound Brook, N.J.
Corona Chemical Co., Milwaukee, Wis.
Dow Chemical Co., Midland, Mich.
H. A. Du Bois & Sons, Cobden, Ill.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
John Lucas Co., Philadelphia, Pa.
Mechling Bros. Chemical Co., Camden, N.J.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Sherwin-Williams Co., Cleveland, Ohio

LIQUID LIME SULPHUR

Ansbacher-Hagerstown Chemical Corp., Hagerstown, Md.
Ansbacher-Siegle Corp., Brooklyn, N.Y.
Bowker Chemical Co., New York, N.Y.
California Spray-Chemical Corp., Berkeley, Calif.
Central Chemical Co., Inc., Baltimore, Md.
Dow Chemical Co., Midland, Mich.
H. A. Du Bois & Sons, Cobden, Ill.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
John Lucas Co., Philadelphia, Pa.
Mechling Bros. Chemical Co., Camden, N.J.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Sanocide Spray Co., Fennville, Mich.
Sherwin-Williams Co., Cleveland, Ohio

PINK SULPHUR

Niagara Sprayer & Chemical Co., Inc., Middleport, N. Y.

"MAGNETIC" CATALYTIC SULPHUR

A safer to be used in Lime Sulphur-Lead Arsenate Spray Combinations. Blocks formation of black sludge and harmful arsenical compounds.

STAUFFER CHEMICAL CO.
CHICAGO-420 LEX. AVE., N.Y.C.-FREEPORT, TEX.

SPREAD-OL-

Has many uses in the spray schedule from dormant to last cover. Write for particulars or see your dealer.

SILMO CHEMICAL CO.
Vineland, New Jersey

Before You Spray

● BE sure to investigate the many advantages of NOPCO SOLUBLE FISH OIL. This new development, the only product of its kind, will help you obtain increased effectiveness of spray materials; better control of insects and diseases; uniform coverage. Tested and approved by State Experimental Stations. Write TODAY for full details.



National Oil Products Company, Inc.
Harrison, N. J.
Boston, Chicago, Cedarhurst, Ga., San Francisco

SOLUBLE SULPHUR

Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Stauffer Chemical Co., New York, N.Y.

WETTABLE SULPHUR

American Cyanamid & Chemical Corp., Insecticide Dept., New York, N.Y.
Ansbacher-Hagerstown Chemical Corp., Hagerstown, Md.
Ansbacher-Siegle Corp., Brooklyn, N.Y.
Battelle & Renwick, New York, N.Y.
Calcium Sulphide Corp., Damascus, Va.
California Spray-Chemical Corp., Berkeley, Calif.
Dow Chemical Co., Midland, Mich.
H. A. Du Bois & Sons, Cobden, Ill.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
John Lucas Co., Philadelphia, Pa.
Mechling Bros. Chemical Co., Camden, N.J.
Merrimac Chemical Co., Everett, Mass.
Micronizer Processing Co., Inc., Moorestown, N.J.
National Sulphur Co., Inc., New York, N.Y.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Public Service Electric & Gas Co., Camden Coke Plant, Camden, N.J.
Sherwin-Williams Co., Cleveland, Ohio
Stauffer Chemical Co., New York, N.Y.
White Tar Co. of N.J., Inc., Kearny, N.J.

"MAGNETIC SPRAY" WETTABLE SULPHUR

Magnetic Spray is a product of proven merit, used by successful growers everywhere for its unusual protecting qualities. Ask your dealer for "Magnetic Spray."
STAUFFER CHEMICAL CO.
CHICAGO-420 LEX. AVE., N.Y.C.-FREEPORT, TEX.

Micronized Wettable Sulfur (Average Particle Size—4000 Mesh)

Micronized Sulfur Dusts (Average Particle Size—2000 Mesh)

Micronizer Processing Company, Inc.
Moorestown, N.J.

Zinc Compounds

ZINC SULPHATE

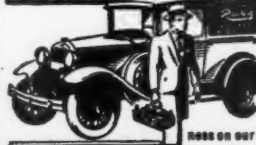
Central Chemical Co., Inc., Baltimore, Md.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
Sherwin-Williams Co., Cleveland, Ohio
Tennessee Corp., Lockland, Ohio
Virginia Smelting Co., West Norfolk, Va.

36% ZINC SULFATE

"ORIGINAL FINE 89% GRANULAR"
VASCO-4-seed treatment

VIRGINIA SMELTING COMPANY
West Norfolk, Virginia

MAN WITH CAR WANTED



To conduct world-renowned home service business—countrywide. Nothing new. Now over 8,000 Rawleigh Dealers. Many do \$3,000-\$5,000 annual business in necessities for home farm. 50% profit supplied on credit. Write for information how to start in business on our capital. Dept. F-78-AFC.

W.T. Rawleigh Co., Freeport, Ill.
*Includes nationally recognized D. & D. for orchard spraying—thousands of gallons sold yearly.

STORAGES

Blowers and Fans

American Blower Corp., Detroit, Mich.
Autovent Fan & Blower Co., Chicago, Ill.
Buffalo Forge Co., Buffalo, N.Y.
Clarage Fan Co., Kalamazoo, Mich.
Coppus Engineering Corp., Worcester, Mass.
Craine, Inc., Norwich, N.Y.
Diehl Mfg. Co., Elizabeth, N.J.
Ilg Electric Ventilating Co., Chicago, Ill.
Niagara Blower Co., Buffalo, N.Y.
L. J. Wing Mfg. Co., New York, N.Y.
Wolverine Blower Works, Grand Rapids, Mich.

Building Papers

Angier Corp., Framingham, Mass.
Sisalkraft Co., Chicago, Ill.

Doors

Baker Ice Machine Co., Inc., Omaha, Nebr.
Craine, Inc., Norwich, N.Y.
Bernard Gloekler Co., Pittsburgh, Pa.
Jamison Cold Storage Door Co., Hagerstown, Md.
National Refrigerator Co., St. Louis, Mo.
Parker Ice Machine Co., Inc., San Bernardino, Calif.
Phoenix Ice Machine Co., Cleveland, O.
York Ice Machinery Corp., York, Pa.

Ducts, Air

Carrier Corp., Newark, N.J.
L. O. Koven & Bro., Inc., Jersey City, N.J.
Mead-Penn Iron Wks. Co., Meadville, Pa.
Stover Steel Tank & Mfg. Co., Freeport, Ill.
Treadwell Construction Co., Midland, Pa.



Get PERMANENT Insulating Efficiency in Storage Rooms!

Basically mineral, hence imperishable, J-M Rock Cork maintains its unusually high insulating effectiveness year after year. Easily applied, adaptable to every type of construction... its use offers the following advantages in fruit-storage rooms:

Unusual resistance to moisture infiltration... Immunity to rot and decay... Proof against termites... Freedom from mold and bacteria... Never absorbs or gives off odors.

As a result, J-M Rock Cork is economically, permanently solving the storage-insulation problem for fruit growers everywhere. For details, write Johns-Manville, 22 E. 40th St., N.Y.C.

Johns-Manville ROCK CORK

Low-temperature insulation for sheets and for pipe covering

JUNE, 1937

Hoists, Electric

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Detroit Hoist & Machine Co., Detroit, Mich.
Electro Lift, Inc., New York, N.Y.
Fairbanks, Morse & Co., Chicago, Ill.
Robbins & Myers, Inc., Springfield, Ohio
Shepard Niles Crane & Hoist Corp., Montour Falls, N.Y.
Silent Hoist Winch & Crane Co., Brooklyn, N.Y.
Yale & Towne Mfg. Co., Philadelphia, Pa.



REFRIGERATION EARNS PROFITS FOR FRUIT AND VEGETABLE GROWERS

Write or Wire

The Phoenix Ice Machine Co.
2703 Church St. Cleveland

Humidifiers

American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N.Y.
Carrier Corp., Newark, N.J.
Ilg Electric Ventilating Co., Chicago, Ill.
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

Insulation

Armstrong Cork Products Co., Lancaster, Pa.
Bird & Son, E. Walpole, Mass.
Philip Carey Co., Lockland, Ohio
The Celotex Corp., Chicago, Ill.
Cork Insulation Co., New York, N.Y.
Craine, Inc., Norwich, N.Y.
Excelsior Mills Corp., Jacksonville, Fla.
Gay Engineering Corp., Los Angeles, Calif.
General Insulating & Mfg. Co., St. Louis, Mo.
Insulite Co., Minneapolis, Minn.
Johns-Manville, New York, N.Y.
Masonite Corp., Chicago, Ill.
Mitchell & Smith, Inc., Detroit, Mich.
National Gypsum Co., Buffalo, N.Y.
Owens-Illinois Glass Co., Toledo, Ohio
Pacific Lumber Co., San Francisco, Calif.
Pacific Lumber Co. of Illinois, Chicago, Ill.
Red Head Brand Co., Chicago, Ill.
Reynolds Metals Co., Inc., New York, N.Y.
Ruberoid Co., New York, N.Y.
Servicised Products Corp., Chicago, Ill.
Silvercote, Inc., Kalamazoo, Mich.
United Cork Companies, Kearny, N.J.
U. S. Gypsum Co., Chicago, Ill.
Wood Conversion Co., St. Paul, Minn.

Refrigeration Machinery

Advanced Refrigeration Systems, Inc., Philadelphia, Pa.
Automatic Refrigerating Co., Hartford, Conn.
Baker Ice Machine Co., Inc., Omaha, Nebr.
Ball Ice Machine Co., St. Louis, Mo.
Bedell Engineering Co., Los Angeles, Calif.
Buffalo Refrigerating Machinery Co., Brooklyn, N.Y.
Burge Ice Machine Co., Chicago, Ill.
Carrier Corp., Newark, N.J.
De LaVergne Engine Co., Inc., Philadelphia, Pa.
Frick Co., Waynesboro, Pa.
Frigidaire Corp., Dayton, Ohio
Gay Engineering Corp., Los Angeles, Calif.
General Electric Co., Cleveland, Ohio
General Refrigeration Sales Co., Beloit, Wis.
Harris Ice Machine Works, Portland, Ore.
Hill Diesel Engine Co., Lansing, Mich.
Howe Ice Machine Co., Chicago, Ill.
Nash-Kelvinator Corp., Detroit, Mich.
Norge Corp., Detroit, Mich.
Parker Ice Machine Co., Inc., San Bernardino, Calif.
Phoenix Ice Machine Co., Cleveland, Ohio
Remington Machine Co., Wilmington, Del.
Serval Inc., Evansville, Ind.
Vilter Mfg. Co., Milwaukee, Wis.
Westinghouse Electric & Mfg. Co., Mansfield, Ohio
Worthington Pump & Machinery Corp., Harrison, N.J.
York Ice Machinery Corp., York, Pa.

Keep fruit in your own cold storage at an overall cost of 10 to 12 cents a bu. for the season. You can do it with Frick Refrigeration. Branches and Distributors everywhere: write

Frick Co.
WAYNESBORO, PENNA. U.S.A.

FRUIT STORAGE Kalamazoo Glazed Tile Insulated with Palco Wool



Successful fruit growers all over the Middle West have proven the superiority of Kalamazoo Glazed Tile storage insulated with Palco Wool. Low in cost—high in efficiency—beautiful in appearance—low cost of upkeep. Write for complete information. Let us help solve your storage problem.

Kalamazoo Tank & Silo Co. KALAMAZOO MICHIGAN
AMERICAN FRUIT GROWER

STORAGES

Roofing

Barber Asphalt Co., Philadelphia, Pa.
Barrett Co., New York, N.Y.
Bird & Son, E. Walpole, Mass.
Brown Fence & Wire Co., Cleveland, Ohio
A. M. Byers Co., Pittsburgh, Pa.
Philip Carey Mfg. Co., Lockland, Ohio
Craine, Inc., Norwich, N.Y.
Edwards Mfg. Co., Cincinnati, Ohio
Flintkote Co., New York, N.Y.
Gay Engineering Corp., Los Angeles, Calif.
Globe Iron Roofing & Corrugating Co., Cincinnati, Ohio
Johns-Manville, New York, N.Y.
Lehon Co., Chicago, Ill.
National Fireproofing Co., Pittsburgh, Pa.
National Roofing Co., Tonawanda, N.Y.
Ruberoid Co., New York, N.Y.
Southport Paint Co., Inc., Savannah, Ga.
Texas Co., New York, N.Y.
U. S. Gypsum Co., Chicago, Ill.

Thermostats

Baker Ice Machine Co., Omaha, Nebr.
Bristol Co., Waterbury, Conn.
Carrier Corp., Newark, N.J.
General Electric Co., Schenectady, N.Y.
H-B Instrument Co., Inc., Philadelphia, Pa.
Powers Regulator Co., Chicago, Ill.
Taylor Instrument Co., Rochester, N.Y.
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

Tile, Building

Craine, Inc., Norwich, N.Y.
Kalamazoo Tank & Silo Co., Kalamazoo, Mich.
Masonite Corp., Chicago, Ill.
National Fireproofing Co., Pittsburgh, Pa.
New Bethlehem Tile Co., New Bethlehem, Pa.

Ventilators

Baker Ice Machine Co., Inc., Omaha, Nebr.
Clay Equipment Corp., Cedar Falls, Iowa
Craine, Inc., Norwich, N.Y.
Gay Engineering Corp., Los Angeles, Calif.
Ilg Electric Ventilating Co., Chicago, Ill.
James Mfg. Co., Ft. Atkinson, Wis.
Kirk & Blum Mfg. Co., Cincinnati, Ohio
Louden Machinery Co., Fairfield, Iowa
Moore Dry Kiln Co., N. Portland, Ore.
Royal Ventilator Co., Philadelphia, Pa.

Waterproofing Compounds

Barber Asphalt Co., Philadelphia, Pa.
Bird & Son, Inc., E. Walpole, Mass.
Ceresit Waterproofing Corp., Chicago, Ill.
Johns-Manville, New York, N.Y.
Koppers Products Co., Pittsburgh, Pa.
Master Builders Co., Cleveland, Ohio
Toch Brothers, Inc., New York, N.Y.
Waterproofing Co., New York, N.Y.

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Radio in Every Room
Air Conditioned
Lobby, Dining Room, Grill
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IN KINGSTON, NEW YORK

THE GOVERNOR CLINTON

Headquarters Hotel for
1938 Eastern Convention and Show
N. Y. State Horticultural Society

TILLAGE EQUIPMENT

Cultivators and Harrows

S. L. Allen & Co., Inc., Philadelphia, Pa.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Athens Plow Co., Athens, Tenn.
Barker Mfg. Co., David City, Nebr.
Blount Plow Works, Evansville, Ind.
J. I. Case Co., Racine, Wis.
Centaur Tractor Corp., Greenwich, Ohio
Champion Corp., Hammond, Ind.
Cleveland Tractor Co., Cleveland, Ohio
Cutaway Harrow Co., Higganum, Conn.
John Deere, Moline, Ill.
Dempster Mill Mfg. Co., Beatrice, Nebr.
Farm Tools, Inc., Mansfield, Ohio
A. B. Farquhar Co., Ltd., York, Pa.

Gravely Motor Plow & Cultivator Co., Dunbar, W. Va.
Handy Harrow Co., Peoria, Ill.
Hussey Plow Co., N. Berwick, Maine
International Harvester Co., Chicago, Ill.
Lehr Co., Fremont, Ohio
Massey-Harris Co., Racine, Wis.
Minneapolis-Moline Power Implement Co., Minneapolis, Minn.
Nash-Acme Harrow Co., Haddonfield, N.J.
Ohio Cultivator Co., Bellevue, Ohio
Oliver Farm Equipment Sales Co., Chicago, Ill.
Pioneer Mfg. Co., West Allis, Wis.
Towner Mfg. Co., Santa Ana, Calif.
Utilitor Co., Dayton, Ohio
Wiard Plow Co., Batavia, N.Y.

IRRIGATION RESERVOIR FOR ILLINOIS ORCHARD!



These three "Caterpillar" track-type Tractors are building a dam to impound irrigation water—for the Thos. S. Smith & Sons, Inc., orchard near Roodhouse, Illinois.

One Diesel RD4 and Twenty-Two belong to this fruit grower—the other Diesel RD4 belongs to a farm power contractor. Each machine is moving 160 yards of dirt per 8-hour day—on a 300-foot haul—using less than 18 gallons of low-cost fuel.

Thus does this orchardist arm

against another drouth like 1936. And thus do "Caterpillar" track-type Tractors prove their fitness for special—as well as regular—orchard work. They'll be ready to pump water, between spraying and cultivating jobs—at record low cost!

CATERPILLAR TRACTOR CO. PEORIA, ILL.



REG. U. S. PAT. OFF.

WORLD'S LARGEST MANUFACTURER OF DIESEL ENGINES AND TRACK-TYPE TRACTORS

CATERPILLAR TRACTOR CO., Dept. A-6, Peoria, Illinois

Gentlemen: I operate _____ acres of orchard.

My power is _____

Please send facts on:

☐ Orchard Model Twenty-Two
(Gasoline or Distillate)

☐ Orchard Model Diesel RD4

NAME _____

COUNTY _____

R. F. D. _____

STATE _____

TILLAGE EQUIPMENT

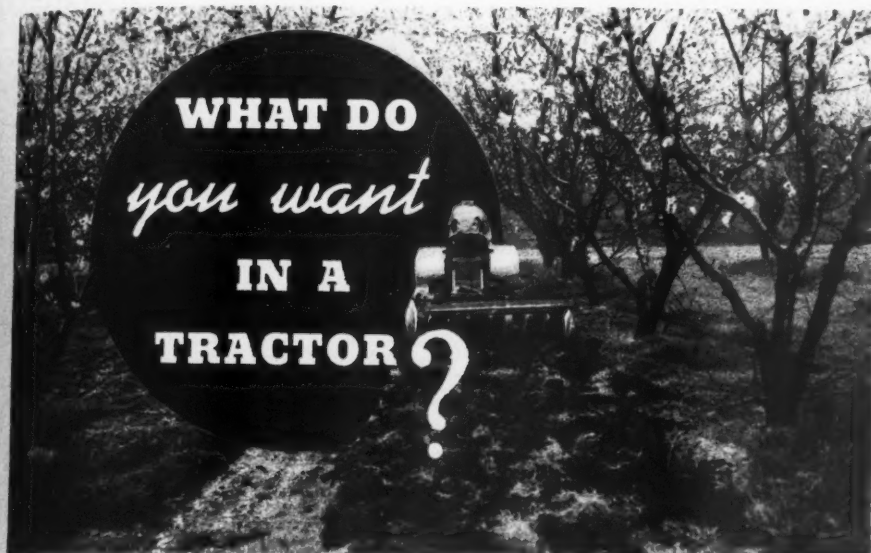
Explosives

Atlas Powder Co., Wilmington, Del.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Hercules Powder Co., Wilmington, Del.

Fertilizer Distributors

S. L. Allen & Co., Inc., Philadelphia, Pa.
Blount Plow Works, Evansville, Ind.
J. I. Case Co., Racine, Wis.
Cyclone Seeder Co., Urbana, Ind.
John Deere, Moline, Ill.
Farm Tools, Inc., Mansfield, Ohio

A. B. Farquhar Co., Ltd., York, Pa.
Gravely Motor Plow & Cultivator Co., Dunbar, W. Va.
Hampshire Implement Co., Hatfield, Mass.
International Harvester Co., Chicago, Ill.
Massey-Harris Co., Racine, Wis.
New Idea Co., Inc., Coldwater, Ohio
Ohio Cultivator Co., Bellevue, Ohio
Oliver Farm Equipment Sales Co., Chicago, Ill.
Ontario Drill Co., E. Rochester, N.Y.
Smith Agr. Chemical Co., Columbus, Ohio
Wayne Agr. Works, Inc., Goldsboro, N.C.
Andrew Wilson, Inc., Springfield, N.J.



- Streamline Design?
- Short Turning?
- Power?
- Easy Handling?
- Choice of Fuel?

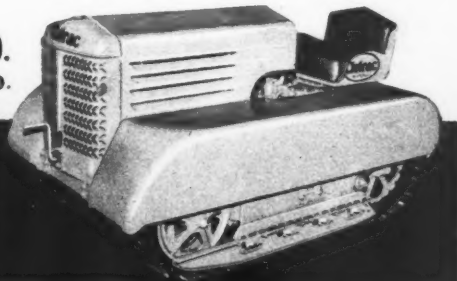
LOOK at Cletrac from any angle you please. Check the jobs you want a tractor to do—pull a heavy spray rig today... disc close around trees tomorrow... plow to full depth the next... and meantime complete such odd jobs as digging a ditch or pulling stumps.

In every operation around your orchard you'll find Cletrac delivers exactly what you want in a tractor. Crawler tracks go anywhere; controlled differential steering, exclusive with Cletrac, provides easy handling and short turns; low center of gravity and ample power enable you to work steepest hillsides; streamlined design slips readily through closely planted trees.

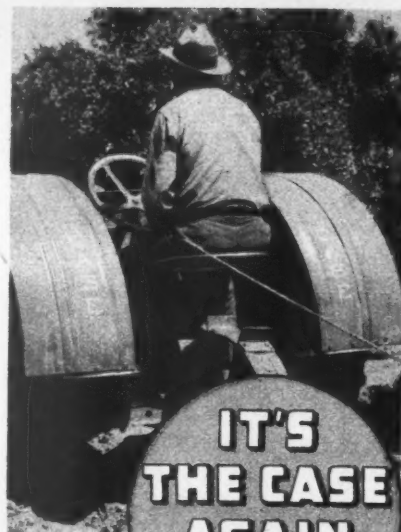
We believe you will get more for your money in Cletrac—not only in tractor alone, but also in the ability of Cletracs to make money for you through Cletrac's all year—all purpose usefulness. Ask the nearest dealer to prove these facts to you in your own orchard.

THE CLEVELAND TRACTOR CO.
19300 EUCLID AVE., CLEVELAND, O.

4 Models with Diesel Motors
11 Models with Gasoline or
Tractor Fuel Motors
22 - 94 Horsepower



CLETRAC CRAWLER TRACTORS



YOU GET ALL THREE
IN A 1937
CASE TRACTOR

LOW .. FIRST COST
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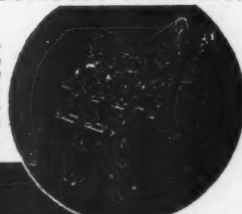
Fuel economy? Case tractors get amazing amounts of power out of *any* fuel from furnace oil to gasoline — *any* fuel fit for *any* practical farm or fruit tractor. But fuel is only part of power cost. Case tractors cost little to buy... give you a lot of power for every dollar of first cost. Most important, Case has longer life and lowest upkeep costs... lowest total cost.

Case tractors pay better because they move faster, turn quicker, pull full loads on short turns, handle easier, do less damage to limbs and fruit. See these many-fuel, many-feature orchard tractors at your near-by Case dealer. Write for free book, "Money Ahead," to J. I. Case Co., Dept. F-12, Racine, Wis.

CASE

STEEL PLOW BUILDERS SINCE 1897

Case Centennial orchard plow. Clearance to handle heavy cover crops at any depth; high-speed bottoms to scour and cover; extra high, quick-acting lift.

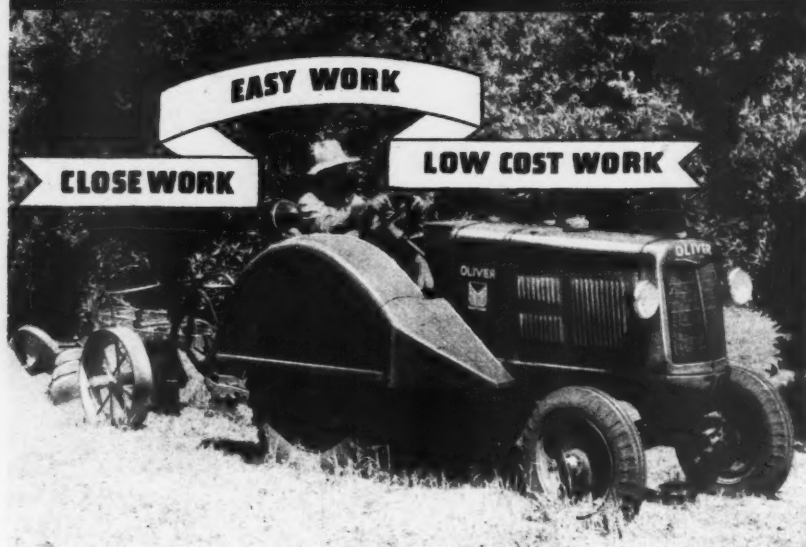


Case Subsoil Tiller with power-lift and crankshaft adjustment. Convertible to 3 or 1 standards.

Case "J" orchard disk harrow angles and straightens with drawbar power under trip-rope control. Low frame; no levers; nothing to catch branches.



YOU GET **ALL 3** IN OLIVER ORCHARD "70" OPERATION



SEE, AND DRIVE, THE OLIVER ORCHARD "70"!

You work close and clean with an Oliver Orchard "70". Fully streamlined, it is free of all projections, shielded and guarded to prevent damage to your trees. It is low in height, short in turning radius, compact and handy.

You do your work easily. The spring-and-hammock seat is comfortable. You ride at ease. There is less work, less tiring vibration with the smooth-running, smooth-handling "70". It has a self-starter. It is as modern as a 1937 automobile and as easy to handle.

The "70" HC, with its High Compression Head and special manifold, gets maximum power and fuel economy from regular gasoline.

The "70" KD, with entirely different head and manifold, gets maximum power and fuel economy from kerosene or No. 1 distillate.

These Oliver "70" 6-cylinder engines get more power from the fuels which they are designed to

use than any so-called "all-fuel" engine can.

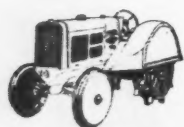
You pick the fuel you want to use, the "70" engine to use it most economically, and you have a tractor with smooth, quiet, 6-cylinder power for orchard cultivation.

The flow of power to the wheels is steadier. There is less lost motion, more efficient power and longer life for tractor and for tools.

Ask your Oliver Dealer for a demonstration of 6-cylinder power and fine farm machines. Or, send the coupon for complete information.



See your Oliver Dealer or check and mail the coupon to Oliver, 400 W. Madison St., Chicago, Ill.



- ☐ Orchard "70" Tractor
- ☐ Row Crop "70" Tractor
- ☐ 18-28 or 28-44 Tractor



- ☐ Orchard Tractor Plow
- ☐ Walking Plow
- ☐ Orchard Cultivator



- ☐ Orchard Disc Harrow
- ☐ Spring Tooth Harrow
- ☐ Hay Tools

AFG-3-37

DRIVE A 2-CYLINDER, A 4-CYLINDER, AND A 6-CYLINDER TRACTOR AND YOU'LL SEE WHY THE OLIVER "70" IS A "6"

TILLAGE EQUIPMENT

Mowers

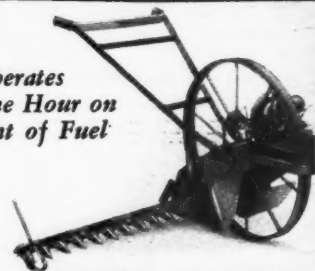
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Detroit Harvester Co., Detroit, Mich.
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Gravely Motor Plow & Cultivator Co., Dunbar, W. Va.
International Harvester Co., Chicago, Ill.
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Minneapolis-Moline Power Implement Co., Minneapolis, Minn.
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DETROIT HARVESTER MOTOR SCYTHE

Operates
One Hour on
Pint of Fuel



THE MOTOR SCYTHE DOES A WEEK'S WORK IN ONE DAY!

In the orchard the Motor Scythe is a speedy worker in mowing legumes around trees where the sod mulch system is used. It is ideal for under low branches where it is impossible to manipulate a horse drawn mowing machine, and difficult to reach with a scythe.

Sturdily built, perfectly balanced, and easily operated. Wheel 30 inches, cutting bar 36 inches, mowing a 30 inch swath. Air cooled motor operates 4 hours on 1/2 gallon of gasoline. Weighs 135 pounds. List price \$125.00.



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5457 WEST JEFFERSON AVENUE, DETROIT

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Now available with Air Tires

for greater speed and fuel economy. Low-pressure balloon type. Easy to handle, splendid traction. Also with steel wheels and lugs. Plenty of power at low cost; over 4 h. p. on belt work. Plows, discs, seeds, cultivates, etc. Write

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IN cars, trucks, tractors, sprayers and other orchard machinery, Hyatt Roller Bearings protect vital working parts . . . Most builders include them as regular equipment—but to play safe, look for Hyatts in the specifications . . . Likewise, should Hyatt replacements ever be required, be sure you get Genuine Hyatts—the correct equipment originally employed. Hyatt Bearings Division, General Motors Corporation, P. O. Box 476, Newark, N. J.

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John Deere, Moline, Ill.
Fate-Root-Heath Co., Plymouth, Ohio
Huber Mfg. Co., Marion, Ohio
International Harvester Co., Chicago, Ill.
Massey-Harris Co., Racine, Wis.
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Oliver Farm Equipment Sales Co., Chicago, Ill.
Tractor Tractor Co., Benton Harbor, Mich.
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JUNE, 1937

POSITIVE control, the quick-acting "M" engine, and a short six-foot turning radius . . . all enable the Model "M" operator to put both tractor and implement just where he wants them. Each track is separately and individually under the operator's control. When both clutches are engaged, full power is applied to both tracks . . . there is no chance of one track standing idle while the other slips in loose footing. Foot brakes can be locked to hold tractor on steep hills or for belt work. Wide or standard tread. New, streamline orchard Model. Send coupon for FREE catalog.

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- Streamline Design
- Better Balance
- Light Weight
- Four Speeds Forward
- More Power
- Gasoline, Kerosene, Distillate, Butane
- Shorter Turning

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Dept. 16, Tractor Division, Milwaukee, Wis.

Gentlemen: Send FREE catalog on ☐ Model "M"; ☐ Model "WK-O" Oil Tractor. I farm _____ acres.

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Weed Hogs

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No Time Like Now to Get in—

Make up to \$75 a week

It's no trick to make up to \$12 a day when you use your car as a McNeess "Store on Wheels." Farmers are buying everything they can from McNeess men. Attractive business-getting prizes, also money-saving deals to customers make selling McNeess daily necessities a snap. This business is depression-proof.

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A GOOD DOSE OF
SANI-FLUSH!**



You can save repair bills and add to the efficiency of summer driving if you clean out the rust and scale in your radiator. Sani-Flush does it, for ten cents, in a few minutes.

Just pour some Sani-Flush in the radiator. (Directions on the can.) Run the motor. Drain. Flush. Refill with clean water. A cool-running car has more power, more snap. It doesn't depreciate so fast. Sani-Flush cannot hurt aluminum cylinder heads or motor fittings.

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Sani-Flush Safe NOT CAUSTIC
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PHILADELPHIA
One of the few famous hotels in America
CLAUDE H. BENNETT, Gen. Mgr.

PAGE 38

IRRIGATION AND DRAINAGE

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B. & B. Irrigating System, Port Clinton, Ohio
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Manhattan Rubber Mfg. Co., Passaic, N.J.
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Flood, Furrow, or low-pressure Sprinkle. Describe your problem.

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JUNE, 1937

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For Apple, Peach and Pear Growers

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High Quality, Convenient, Comfortable, Guaranteed. Pickers like 'em. That's why they sell so well.

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Edging Spring Tooth and Disc Harrows, Ladders, Ladder Trucks, Picking Bags, Buckets and Buckets, Orchard and Shipping Crates, Wire Pickers, Pickers' Tickets, Barrels, Baskets, Display Containers, etc.

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See Advs. Pages 26, 41, 44

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Bauer Mfg. Co.
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BOOK OF FRUITS
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JUST OFF PRESS—FREE—Use COUPON

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PAGES
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U.S. Patent) Largest, Sweetest Solid Gold Plum—New Black GIANT CHERRIES, gigantic size, exquisitely sweet and delicious.

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In addition to wonderful exclusive fruit varieties Sold ONLY by Stark Bro's, this book is packed with finest Shrubs—Roses and Ornamental Plants of every description—shown in bloom in beautiful, glowing colors. This great NEW Book cost over \$50,000 to produce—it GIVES YOU the results of over a century of expert horticultural experience of Stark Bro's in the development of hardy, HEAVY-BEARING FRUIT VARIETIES and the most exquisite SHRUBS—ROSES and ORNAMENTAL PLANTS.

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Send Coupon—get our amazing offer of free trees to every buyer—also valuable Free Guide to planting. Fruit Experts will gladly help you select Big-gest money-making varieties for your section.

Check circle in Coupon for Farm-Home Landscape Plans Free to Customers.

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PLANTING PLAN HOME-YARD ORCHARD
1/2-ACRE & FULL-ACRE FARM ORCHARD and VINEYARD
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STARK NURSERIES
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Trees, Shrubs, Roses.
Check circle for Landscape Plans for Farm Homes.

Name _____
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Check here for FREE full details of NEW, EXTRA-GENEROUS Salesmen's Weekly PAY-PLAN for Spare Time Selling

NURSERY STOCK

A complete directory of fruit varieties is too extensive to be included here. A special Nursery and Fall Planting Guide will therefore be issued next October. It will contain a complete list of varieties, seeds and planting supplies.

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Eimer & Amend, New York, N.Y.
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Edwards Laboratory, Lansing, Mich.
Sudbury Soil Testing Laboratory, Sudbury, Mass.

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D. Ballauf Mfg. Co., Washington, D.C.
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Be sure your soil contains the proper elements for vigorous growth. You can make your own soil analysis with a Simplex Soil Test Outfit. This is a complete, practical outfit for the accurate chemical diagnosis of soil needs. Developed from soil testing system of Michigan State College. Complete instructions with each outfit. Write for our descriptive folder.

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DOUBLE H B DIAMOND
DEPENDABLE
ORCHARD MINIMUM THERMOMETERS
APPROVED TYPE

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Fulton Bag & Cotton Mills, Atlanta, Ga.

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Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Cleveland, Ohio
Fulton Bag & Cotton Mills, Atlanta, Ga.

BAGS, PAPER

Bemis Bro. Bag Co., St. Louis, Mo.
Chase Bag Co., Cleveland, Ohio
Fulton Bag & Cotton Mills, Atlanta, Ga.

BASKETS, CORRUGATED

Ashtabula Corrugated Box Co., Ashtabula, Ohio
Container Corp. of America, Chicago, Ill.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
Hankins Container Co., Cleveland, Ohio

BASKETS, FIBER

John Bacon, Inc., Gasport, N.Y.
Container Corp. of America, Chicago, Ill.
Robert Gair Co., Inc., New York, N.Y.
Kieckhefer Container Co., Delair, N.J.
Pioneer Paper Stock Co., Chicago, Ill.
Fred C. Strype, New York, N.Y.
Edwin C. Tyson, Flora Dale, Pa.

BOX SHOOKS

Chicago Mill & Lumber Co., Chicago, Ill.
Mell Lumber Co., Philadelphia, Pa.
New England Box Co., New York, N.Y.
Spruce Veneer Package Corp., Puyallup, Wash.

BOXES, BERRY

Berlin Fruit Box Co., Berlin Heights, O.
H. A. Du Bois & Sons, Inc., Cobden, Ill.
F. W. Harrison & Son, Painesville, Ohio
New Albany Box & Basket Co., New Albany, Ind.
Paducah Box & Basket Co., Paducah, Ky.
Rollrim Box Co., Benton Harbor, Mich.
Spruce Veneer Package Corp., Puyallup, Wash.
Edwin C. Tyson, Flora Dale, Pa.

BOXES, CORRUGATED

Ashtabula Corrugated Box Co., Ashtabula, Ohio
Baltimore Paper Box Co., Baltimore, Md.
Bird & Son, Inc., E. Walpole, Mass.
Container Corp. of America, Chicago, Ill.
Corrugated Container Co., Columbus, Ohio
Fruit & Produce Packing, Inc., Indianapolis, Ind.
Robert Gair Co., Inc., New York, N.Y.
Hankins Container Co., Cleveland, Ohio
Hinde & Dauch Paper Co., Sandusky, O.
Owens-Illinois Pacific Coast Co., San Francisco, Calif.
Pioneer Paper Stock Co., Chicago, Ill.
B. G. Pratt Co., New York, N.Y.
Simplex Paper Corp., Adrian, Mich.

BOXES, FIBER

Baltimore Paper Box Co., Baltimore, Md.
Bird & Son, Inc., E. Walpole, Mass.
Container Corp. of America, Chicago, Ill.
Evansville Container Co., Evansville, Ind.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
Robert Gair Co., Inc., New York, N.Y.
Hinde & Dauch Paper Co., Sandusky, O.
Pioneer Paper Stock Co., Chicago, Ill.
Rollrim Box Co., Benton Harbor, Mich.
Fred C. Strype, New York, N.Y.

BOXES, PAPER

Robert Gair Co., Inc., New York, N.Y.
Pioneer Paper Stock Co., Chicago, Ill.
Fred C. Strype, New York, N.Y.
Sutherland Paper Co., Kalamazoo, Mich.
Wolverine Carton Co., Grand Rapids, Mich.

BOXES, WINDOW

Robert Gair, Inc., Piermont, N.Y.
Sutherland Paper Co., Kalamazoo, Mich.

BOXES, WOOD

Barden & Robeson Corp., Penn Yan, N.Y.
Chicago Mill & Lumber Co., Chicago, Ill.
H. A. Du Bois & Sons, Inc., Cobden, Ill.
Evans Products Co., Detroit, Mich.
Evansville Container Corp., Evansville, Ind.
General Box Co., Chicago, Ill.
Mell Lumber Co., Philadelphia, Pa.
New Albany Box & Basket Co., New Albany, Ind.
New England Box Co., New York, N.Y.
Rathborne, Hair & Ridgway Co., Chicago, Ill.
Smeed Box Co., Cleveland, Ohio
Spruce Veneer Package Corp., Puyallup, Wash.

CRATES, CORRUGATED BERRY

Ashtabula Corrugated Box Co., Ashtabula, Ohio
Hinde & Dauch Paper Co., Sandusky, O.
B. G. Pratt Co., New York, N.Y.

CRATES, WOOD

John Bacon, Inc., Gasport, N.Y.
Berlin Fruit Box Co., Berlin Heights, O.
Chicago Mill & Lumber Co., Chicago, Ill.
Frank L. Deaner & Son, Benton Harbor, Mich.
Evans Products Co., Detroit, Mich.
Evansville Basket & Crate Co., Evansville, Ind.
General Box Co., Chicago, Ill.
Marietta Fruit Package & Lumber Co., Marietta, Ohio
Marinette & Menominee Box Co., Marinette, Wis.
Mell Lumber Co., Philadelphia, Pa.
New England Box Co., New York, N.Y.
Paducah Box & Basket Co., Paducah, Ky.
Fre Patton, Jewett, Ohio
Rathborne, Hair & Ridgway Co., Chicago, Ill.
Roberts-Liggett Co., Metropolis, Ill.
Rooks Mfg. Co., Humboldt, Tenn.
Smeed Box Co., Cleveland, Ohio
Spruce Veneer Package Corp., Puyallup, Wash.

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W. P., Y. P., HARDWOODS
(CARLOTS ONLY)

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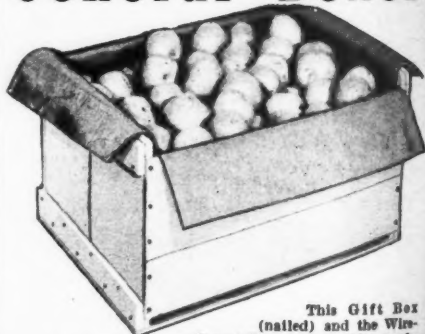
Pack Your Apples in the Approved

NEW ENGLAND APPLE BOX

Easily stacked. Saves storage space.
Commission merchants prefer them.

Manufactured by
THE SMEED BOX COMPANY
1878 SCRANTON ROAD, CLEVELAND, OHIO

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This Gift Box (nail) and the Wire-bound Type pioneered box packing of apples. Take up less space in trucks and storage. Lower storage costs because of space saving and quicker cooling. Also used as orchard picking crate. Write for prices.

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Brooklyn -- Cincinnati -- Sheboygan -- Chicago
East St. Louis -- Louisville -- Kansas City
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Fruit Growers...Repackers

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Continental Paper Products Co., Denver, Colo.
Edgerton Mfg. Co., Plymouth, Ind.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
B. F. Goodrich Co., Akron, Ohio
Hinde & Dauch Paper Co., Sandusky, O.
Rice, Trew & Rice Co., Biglerville, Pa.
Simplex Paper Corp., Adrian, Mich.
Fred C. Strype, New York, N.Y.
Sutherland Paper Co., Kalamazoo, Mich.
Edwin C. Tyson, Flora Dale, Pa.

Fringes

Continental Paper Products Co., Denver, Colo.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
Pioneer Paper Stock Co., Chicago, Ill.
Rice, Trew & Rice Co., Biglerville, Pa.
Sutherland Paper Co., Kalamazoo, Mich.
Wolverine Carton Co., Grand Rapids, Mich.

Labels

Epsen Lithographing Co., Omaha, Nebr.
Gamse Lithographing Co., Inc., Baltimore, Md.
A. Hoen & Co., Baltimore, Md.
A. B. Morse Co., St. Joseph, Mich.
Reynolds & Reynolds Co., Dayton, Ohio
St. Louis Sticker Co., St. Louis, Mo.
United States Printing & Lithograph Co., Cincinnati, Ohio

Liners

John Bacon, Inc., Gasport, N.Y.
Carpenter-Hiatt Sales Co., Indianapolis, Ind.
Clark Stek-O Corp., Rochester, N.Y.
Continental Paper Products Co., Denver, Colo.
Frank L. Deaner & Son, Benton Harbor, Mich.
Edgerton Mfg. Co., Plymouth, Ind.
Evansville Basket & Crate Co., Evansville, Ind.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
Pioneer Paper Stock Co., Chicago, Ill.
F. A. Read, Inc., Albion, N.Y.
Rice, Trew & Rice Co., Biglerville, Pa.
Simplex Paper Corp., Adrian, Mich.
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Sutherland Paper Co., Kalamazoo, Mich.
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EDWIN C. TYSON, Flora Dale, Pa., U. S. A.

See Ads. Pages 26, 39, 44

The Standard Paper Packaging Line

The Standard 66-Green Stripe Basket Caps

Hiatt Basket Liners

Crystal Shredded Oiled Tissue—Fruit Wraps—Cushions

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JUNE, 1937

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Continental Paper Products Co., Denver, Colo.
Diamond-T-Waxed Paper Corp., Chicago, Ill.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
Rice, Trew & Rice Co., Biglerville, Pa.
Fred C. Strype, New York, N.Y.
Edwin C. Tyson, Flora Dale, Pa.

Paper, Shredded Plain

Brooks Paper Co., St. Louis, Mo.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
Pioneer Paper Stock Co., Chicago, Ill.
Fred C. Strype, New York, N.Y.

Paper, Shredded Transparent

Brooks Paper Co., St. Louis, Mo.
Sylvania Industrial Corp., New York, N.Y.

Stamping Inks

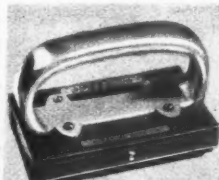
Marsh & Co., New York, N.Y.
Rivet-O Mfg. Co., Orange, Mass.

Stamps, Rubber

Jas. H. Matthews & Co., Pittsburgh, Pa.
J. L. May Co., New York, N.Y.
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Speed Up Your Marking With

Special SPEED-MO FRUIT GROWERS logotype rubber stamps especially designed for marking fruit packages. Complete in one unit having interchangeable logotypes for size, grade and brand. Unnecessary to buy separate rubber stamps. The new SPEED-MO logotype rubber stamps will speed up your marking 200%. Send for our descriptive folder on Fruit Growers Stamp No. 437.



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MIN. SIZE 2 1/2" FANCY
MASS. - APPROVED - CRATE
GREENINGS
PACKED BY
R. D. MARCH

RIVET-OMFG. CO.

38 Orchard St.,
ORANGE, MASS.

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Pioneer Paper Stock Co., Chicago, Ill.
Fred C. Strype, New York, N.Y.

Wrappers, Plain

Fruit & Produce Packing, Inc., Indianapolis, Ind.
United Paper Co., Tampa, Fla.
Wolf River Paper & Fiber Co., Shawano, Wis.

Wrappers, Transparent

Brooks Paper Co., St. Louis, Mo.
H. D. Catty, Franz Euler Co., New York, N.Y.
E. I. du Pont de Nemours & Co., Inc., "Cellophane" Div., Wilmington, Del.
Eastman Kodak Co., Rochester, N.Y.
Goodyear Tire & Rubber Co., Akron, O.
Fred C. Strype, New York, N.Y.
Sylvania Industrial Corp., New York, N.Y.
Zellerbach Paper Co., San Francisco, Calif.

Wrappers, Transparent Printed Sheets and Bags

Dobeckmun Co., Cleveland, Ohio
Milprint Products Corp., Milwaukee, Wis.
Shellmar Products Co., Chicago, Ill.
Traver Corp., Chicago, Ill.
Zellerbach Paper Co., San Francisco, Calif.

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Figs	Plums
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Sunset Brand Oiled Copper Wraps
and Fruit and Vegetable Wraps; liners
and pads of all types.

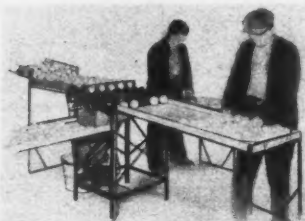
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FRUIT PACKED WITH DECORATIVE FRINGE



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BUTLER "SIMPLEX" GRADER NO BRUISING!

For sizing apples, peaches, round potatoes, onions, tomatoes. All-metal—no wood to warp or repaint. Fruit is handled by soft rubber cups and sizing rings. Changeable rings divide fruit into any 4 of 7 sizes. Capacity as high as 70 bu. per hour. 4 models—Gasoline, Electric, Hand-Crank and Without Power ready for own power unit. Complete, ready to start work. Nothing to build or assemble.

When operating requires floor space 10x12 ft. When not in use, folds to 4 sq. ft. Priced within reach of all. Nothing like it on the market.

Territory Open for Salesmen and Dealers.

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BUTLER MFG. CO., Bell Bldg., CHICAGO

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The World's Finest Cleaning and Grading Machinery for

APPLES—PEACHES—TOMATOES

Dependable

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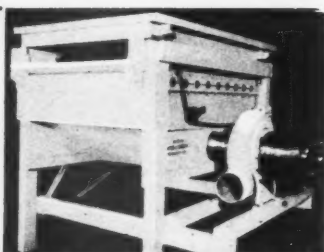
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Exceptionally fine steel construction

For Packing Barrels, Boxes, Bushels and Cartons

A size for every user

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Covesville, Virginia



PEACH AND APPLE BRUSHER

Removes fuzz from peaches, dirt from any size fruit or vegetable, polishes apples. Ball bearing machines, all brushes revolve. Small power consumption, long life, gasoline or electric driven, low cost. 300 to 500 bushels per hr. Hundreds of these machines now in use. Write for bulletin.

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1000 BUSHELS A DAY

Growers using compact, sturdy Taylor apple grader report that it will grade more than 1000 bushels a day. And the cost of this efficient, bruise-preventing grader is only \$95.00. We also manufacture peach graders, sorting chutes, picking bags and fruit pack-shapers. Write for information to:

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John Bean Mfg. Co., Lansing, Mich.
Fred A. Durand, Woodbury, Ga.
J. D. Grabill, Woodstock, Va.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Trescott Co., Inc., Fairport, N.Y.
Edwin C. Tyson, Flora Dale, Pa.
Wayland Machinery Co., Inc., Covesville, Va.

Conveyors

John Bean Mfg. Co., Lansing, Mich.
Brogdex Co., Wenatchee, Wash.
Fred A. Durand, Woodbury, Ga.
A. B. Farquhar Co., Ltd., York, Pa.
Ideal Grader & Nursery Co., Hood River, Ore.
Jeffrey Mfg. Co., Columbus, Ohio
Link-Belt Co., Chicago, Ill.
Mathews Conveyor Co., Ellwood City, Pa.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Parma Water Lifter Co., Parma, Idaho
Standard Conveyor Co., N. St. Paul, Minn.
Trescott Co., Inc., Fairport, N.Y.
Edwin C. Tyson, Flora Dale, Pa.
Wayland Machinery Co., Inc., Covesville, Va.

Ethylene and Ripening Outfits

Carbide & Carbon Chemicals Corp., New York, N.Y.
Ohio Chemical & Mfg. Co., Cleveland, Ohio

Facers, Basket

Continental Paper Products Co., Denver, Colo.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
B. F. Goodrich Co., Akron, Ohio
Hauber Cooperage Co., Kansas City, Kans.
A. H. Phillips Mfg. Co., Hulberton, N.Y.
Rice, Trew & Rice Co., Inc., Biglerville, Pa.
Simplex Paper Corp., Adrian, Mich.

Fly Papers and Ribbons

Excelsior Fly Paper Mills, Chicago, Ill.
Tanglefoot Co., Grand Rapids, Mich.

Fly Sprays

Gulf Oil Corp. of Pa., Pittsburgh, Pa.
Lanair Co., Inc., Chicago, Ill.
Sinclair Refining Co., New York, N.Y.
Stanco, Inc., New York, N.Y.
Standard Oil Co. of Ohio, Cleveland, Ohio
Tanglefoot Co., Grand Rapids, Mich.

Graders and Sizers

George G. Bates, Kingston, N.Y.
John Bean Mfg. Co., Lansing, Mich.
Brogdex Co., Wenatchee, Wash.
Butler Mfg. Co., Chicago, Ill.
Cutler Mfg. Co., Portland, Ore.
Fred A. Durand, Woodbury, Ga.
J. D. Grabill, Woodstock, Va.
Ideal Grader & Nursery Co., Hood River, Ore.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Parma Water Lifter Co., Parma, Idaho
The Taylor Grader, Anna, Ill.
Trescott Co., Inc., Fairport, N.Y.
Edwin C. Tyson, Flora Dale, Pa.
Wayland Machinery Co., Inc., Covesville, Va.

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Clark Stek-O Corp., Rochester, N.Y.
Continental Paper Products Co., Denver, Colo.
Frank L. Deane & Son, Benton Harbor, Mich.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
The Taylor Grader, Anna, Ill.
Edwin C. Tyson, Flora Dale, Pa.

Ripening Outfits, Ethylene

Carbide & Carbon Chemicals Corp., New York, N.Y.
Ohio Chemical & Mfg. Co., Cleveland, O.

Saw Mills

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
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Novo Engine Co., Lansing, Mich.
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Standard Saw Mill Machinery Co., Erie, Pa.
Stover Mfg. & Engine Co., Freeport, Ill.
Witte Engine Works, Kansas City, Mo.

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Cutler Mfg. Co., Portland, Ore.
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Ideal Grader & Nursery Co., Hood River, Ore.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Parma Water Lifter Co., Parma, Idaho
The Taylor Grader, Anna, Ill.
Wayland Machinery Co., Inc., Covesville, Va.

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Faultless Rubber Co., Mansfield, Ohio
Sponge Rubber Products Co., Derby, Conn.

Staplers and Stitchers

Cobden Machine Works, Cobden, Ill.
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Fruit & Produce Packing, Inc., Indianapolis, Ind.
General Food Package Equipment Corp., Benton Harbor, Mich.
Heller Co., Cleveland, Ohio
Markwell Mfg. Co., Inc., New York, N.Y.

Staples

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Markwell Mfg. Co., Inc., New York, N.Y.
Edwin C. Tyson, Flora Dale, Pa.

Turners, Basket

John Bean Mfg. Co., Lansing, Mich.
Continental Paper Products Co., Denver, Colo.
Fruit Packing Equipment Co., Inc., Swoope, Va.
Parma Water Lifter Co., Parma, Idaho
Trescott Co., Inc., Fairport, N.Y.

Washers, Fruit

John Bean Mfg. Co., Lansing, Mich.
Brogdex Co., Wenatchee, Wash.
Cutler Mfg. Co., Portland, Ore.
Ideal Grader & Nursery Co., Hood River, Ore.
Parma Water Lifter Co., Parma, Idaho
Edwin C. Tyson, Flora Dale, Pa.
Wayland Machinery Co., Inc., Covesville, Va.

Washing Compounds, Fruit

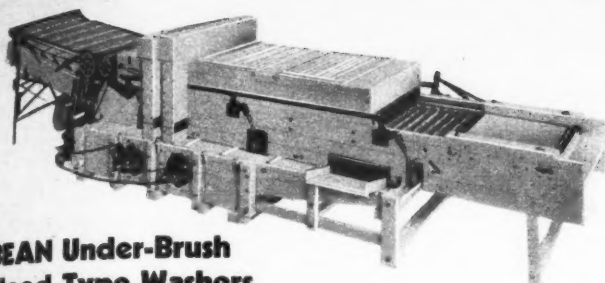
American Colloid Co., Chicago, Ill.
American Cyanamid & Chemical Corp., Insecticide Dept., New York, N.Y.
E. I. du Pont de Nemours & Co., Inc., Gracelli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
Mallinckrodt Chem. Wks., St. Louis, Mo.
Mechling Bros. Chemical Co., Camden, N.J.
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Philadelphia Quartz Co., Philadelphia, Pa.
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BEAN

A Profit Protection Service ...for Growers

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Tell us your needs
in detail and we
will send you defi-
nite information.



BEAN Under-Brush Flood-Type Washers

Washed fruit not only complies with tolerance requirements, but its bright, clean appearance builds up better sales at better prices. Illustrated is the BEAN Under-Brush Washer, the most advanced washing equipment on the market. We build washers to meet all requirements. Write for complete information.



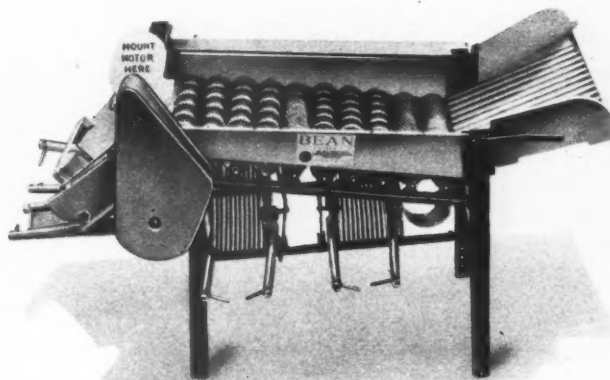
BEAN Graders and Sizers

The BEAN line includes graders and sizers for every purpose... from the small individual model to the large packing house size.



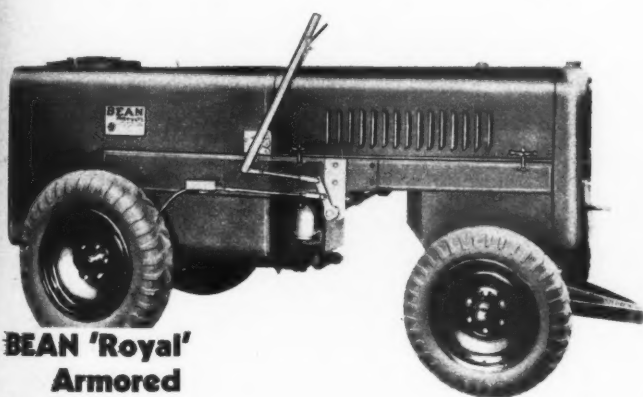
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Various kinds of fruit and vegetables can be cleaned to advantage. BEAN 2-Way Cleaners clean with brushes and polish with cloths. Three sizes. Write for full details on these money-making cleaners.



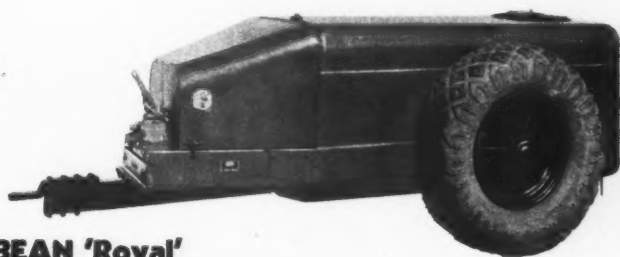
BEAN Rubber Spool Potato Graders

Grades & cleans entirely on rubber. Small, light, compact. Does a better job, and handles the potatoes without injury. Write us at once for further information.



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All steel from end to end, including corrosion-proofed steel tank. Full range of sizes. Can be equipped with pneumatic tires, steel wheels, or without wheels for mounting on your own truck. Write.



BEAN 'Royal' Tractor Power Take-off Sprayers

BEAN Armored Tractor Sprayers are built in a wide range of pump and tank capacities. All-enclosed as shown. Equipped with steel wheels or pneumatic tires. Two-speed transmission, if desired.

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Lansing, Mich.
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West of Rockies write to 104 W. Julian St., San Jose, Calif.

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No damage to bark, because both blades have sharp cutting edges. Blades can be placed close against the main branch, where the cut should be made. POINTCUT is the perfect all-purpose pruner. Cuts sucker or sprouts on the POINT, with minimum handle-opening. Cuts tough branches up to 1 1/4" in the THROAT. The SPUR on upper blade supports lower blade; resists the tendency to cross edges. The patented slide-shift gives a 50% to 100% increase in power when needed. The ideal pruner for fruit, nursery and general horticultural work; particularly useful in apple orchard renovation. Sells for \$5.00.

If your dealer cannot supply, order direct from us, or write for circular I-P6 FORESTER brush cutting and lopping shears and the new pole pruner.

H. K. PORTER, Inc.
EVERETT, MASS.

FOR FINER FRUIT



Wiss Hy-Power Pruner

WISS PRUNERS
LOPPING SHEARS
THINNING SHEARS

A Pruner for Every Purse and Purpose
Write for Full Particulars

Famous for Quality Since 1848 **J. Wiss & Sons Co.** NEWARK, N.J.

GET MORE FRUIT BY PROPER PRUNING

"Snap-Cut" PRUNERS

MAKE PRUNING EASY!
Light weight, handy size—chrome finish, non-pinching handles—strong, durable, easy cutting. No. 115—6" long—cut 1/2" branch—\$2.00. No. 116—6" long—cut 1/2" branch—\$2.50. At your dealer or postpaid—money back guarantee. FREE CIRCULAR.

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EDWIN C. TYSON, Flora Dale, Pa., U.S.A.
See Advs. Pages 26, 29, 41



BARTLETT PRUNERS Bring Results

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3044 E. Grand Blvd., Detroit, Mich.
PAGE 44

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B. F. Goodrich Co., Akron, Ohio
Goodyear Tire & Rubber Co., Akron, Ohio
Johnson & Johnson, New Brunswick, N.J.
Thomas B. Meehan Co., Dresher, Pa.
Menasha Products Co., Menasha, Wis.
The Revolute Corp., New Brunswick, N.J.
Edwin C. Tyson, Flora Dale, Pa.
U. S. Rubber Products, Inc., New York, N. Y.

Grafting Compounds

M. C. Almes, Cuyahoga Falls, Ohio
Bartlett Mfg. Co., Detroit, Mich.
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JUNE, 1937

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Armour Fertilizer Works, Atlanta, Ga.
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Darling & Co., Chicago, Ill.
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Stimulant Laboratories, Inc., Long Island City, N.Y.
Tennessee Corp., Lockland, Ohio

Nitrate of Lime

Central Chemical Co., Inc., Baltimore, Md.

Nitrate of Potash

Battelle & Renwick, New York, N.Y.

Nitrate of Soda

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